Advancing Responsible Adolescent Development

David J. Shernoff

Optimal Learning Environments to Promote Student Engagement

Springer

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To my parents, William Shernoff
and JoAnn Shernoff

Endorsements

"David Shernoff has provided a definitive examination of how youth engage (or fail to engage) in various environments. His book is at once theoretically sophisticated and eminently practical."

Howard Gardner, Hobbs Professor of Cognition and Education, Harvard Graduate School of Education, and author of *Frames of Mind* and *Multiple Intelligences*

"In this singularly erudite, comprehensive, and integrative work, David Shernoff presents a compelling vision for how schools can optimize the engagement of youth in learning and achievement and promote their positive development. This book provides scholars, educators, and policy makers with a unique conceptual template for enhancing the lives of diverse young people and for strengthening the schools and communities of our nation."

Richard M. Lerner, Bergstrom Chair in Applied Developmental Science and Director, Institute for Applied Research in Youth Development, Tufts University, and Author of *Liberty: Thriving and Civic Engagement Among America's Youth*

"This is a valuable book! Schools are not living up to their potential and a major reason is their failure to truly engage students. Shernoff's book provides a comprehensive and compelling account of the critical role of motivation and engagement in learning. The chapters present the research on every aspect of the topic: how engagement effects achievement; how effective teachers sustain high engagement; the design of classroom activities to maximize motivation; and the ways that new model programs, successful alternative schools, and after-school programs facilitate absorption in learning."

Reed Larson, Professor of Human Development, University of Illinois, Champaign-Urbana, Recent President of Society for Research on Adolescence, and Editor-in-Chief (with Lene Jensen) of *New Directions for Child and Adolescent Development*

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Chapter 1
Introduction: Towards Optimal Learning Environments in Schools

Introduction

During the high school years, most students go to school every weekday, enjoy socializing with their friends, and bide their time semi-attentively in most subjects until the school bell finally rings. Many students will have a few favorite subjects and teachers among a great deal more who are soon forgotten. Upon getting out of school each day, at least one quarter of high school-aged students will supervise themselves (The Afterschool Alliance n.d.). Some students participate in school- or community-based sports, music, religious, or arts activities, but most do not have access to organized after-school programs (The Afterschool Alliance. n.d.). Over 40 % of US adolescents participate in some form of drugs (especially after school), one of the highest rates of all industrialized countries (Hibell et al. 2004). Most adolescents also engage in some form of delinquency over the course school year (Agnew 2008). Ironically, it is the students who are the most successful in school and from the most affluent communities who experience classes to be the most mind-numbingly boring, who do drugs most frequently, and are the most anxious and depressed (Luthar 2003; Luthar and D'Avanzo 1999; Shernoff and Schmidt 2008). One begins to ask: Who are the winners in this equation?

We must ask if we can do better when it comes to engaging youth in learning, and how? We would almost have to try to do worse. Over one million, or about 30 %, of all ninth graders in the United States fail to graduate from high school 4 years later, with the dropout rate approaching 50–55 % in some urban

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communities (Alliance for Excellent Education 2009).[1] Many of these nongraduating students eventually obtain a diploma or GED, but in the last 50 years, about 10–15 % drop out of school altogether (National Center for Education Statistics 1993). Many of these individuals go on to raise their own children in a continuing cycle of poverty.[2] Of the most fortunate who go on to college, approximately 20 % of those applying for a job upon graduating with a bachelor's degree became employed in 2009, a small fraction of graduates even for an economic recession (Dooley 2009).[3]

But how are our adolescents feeling, and how are they doing in terms of their mental and physical health? By some estimates, depression is about ten times more common now than it was 50 years ago (Wickramaratne et al. 1989), with nearly 20 % of youth experience an episode of clinical depression by high school completion (Lewinsohn et al. 1993). From the early 1990s to the year 2004, the prevalence of 12–19-year-olds with obesity increased by about 45 %, rising from 11 % to 17 % of the adolescent population (National Center for Health Statistics 2005). According to some estimates, the number of children and adolescents diagnosed with ADHD has doubled in the 1990s alone, to include 7 % of 3–17-year-old children (Bloom and Dey 2006).

These trends surely cannot be blamed only on schools, and yet few argue that our schools "work." Schools' historical resistance to change has proven so stubborn that the thought of changing pervasive school practices would seem to be a sure sign of delusion. However, there are, for the first time in our history, forces at work suggesting the possibility of turning the corner in the effort for change, especially large demographic shifts since schools were first designed (especially the large increase of women in the workforce and accompanying prevalence of dual-career families), and rapid technological changes in how information is obtained. At the same time, there are now models to follow on the path to a brighter, more optimistic future. And these are the major emphasis of this book. The main question this book addresses is: What educational practices do and do not "work," specifically from the standpoint of engaging youth? We all can play a role, however modest, in cultivating the seedlings of positive progress already planted, which, over time, may gradually grow into meaningful change.

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[1] This dropout rate includes students from states in which graduation is dependent on both the successful completion of the 4-year high school curriculum and the state-administered high school leaving or exit examination. Currently, 17, or just over one third of states, mandate such an exit exam. It is important to note that there is controversy around how the high school dropout rate is calculated. The commonly reported metric, based on a data set (Common Core of Data or CCD) managed by the US Department of Education, is the averaged freshman graduation rate, which is said to reflect the percent of ninth graders who graduate on time, 4 years later. However, the CCD reports enrolled, but not entering, ninth graders. This means that the dropout rate can include, at any time, the number of students who were not promoted out of or are voluntarily repeating the ninth grade (Roy and Mishel 2008).

[2] Despite being one of the wealthiest countries that human history has ever produced, 18 % of children born in the United States—and nearly one in every three children in many urban centers—live in poverty (U.S. Bureau of the Census 2007).

[3] This was down from 50 % in 2007.

Significant numbers of youth are disengaged from schooling, the topic to which we will turn next. But at the same time, there have emerged a number of schools that have transformed an educational environment from a breeding ground for disengagement into one fostering strong relational trust and positive regard among staff and peers, enhanced identity and self-esteem among students, and increased enjoyment in activities (Johnson 2008; Jones 2008; Smyth and Fasoli 2007). These kinds of environments are often reflected in students' comments that teachers and staff care or "give a damn," and that learning can coexist with fun (Smyth and Fasoli 2007).

The best if not only defense against pervasive disengagement, which can spread to larger problems from dropout to school violence, is to nurture communities that foster belongingness and meaningful forms of engagement instead of alienation. In other words, effective approaches to addressing some of the most serious problems of youth are *proactive* rather than *reactive*: proactive in creating communities featuring high youth participation, belongingness, and engagement.

Disengagement: How Pervasive Is It?

The limitations of most public schools as a context for students to become engaged in learning are perhaps best illustrated in the reflections of the truly bright and curious. George Lucas recalls, "My own experience in public schools was quite frustrating. I was often bored. Occasionally, I had a teacher who engaged me, who made me curious and motivated to learn. I wondered why school can't be interesting all of the time" (Gates 2007, p. 115). As one passes from elementary school to middle school (or a junior high school) to high school, students typically transition from interacting with one or a few teachers to many, each specializing in a different subject, and the screws begin to tighten on the amount of effort required to earn high grades. It has been observed that schools become like a prison (Jackson 1968) or other such "total institution" (Goffman 1961), in which students must come to grips with the inevitability of being there involuntarily and must devise strategies to cope with the institutional expectations. The transmission model of instruction induces passivity. Achievement is the paramount if not only concern, and motivation to learn is not a goal in its own right. With personal needs unfulfilled, school failure becomes a reality for a significant proportion of students, as evidenced by national dropout rates. "Disengagement" is the term now denoting signifying numbers of young people becoming disconnected from school (Smyth and Fasoli 2007).

Because the pervasive disengagement view of schooling is a popular one, studies of engagement provide an important reality check on just how pervasive disengagement is. Most studies in the United States have found that over one quarter of all high school students are not engaged in schooling (Furlong and Christenson 2008), with many labeling 40–60 % of students as "chronically disengaged," including both high and low achievers alike (Klem and Connell 2004; Marks 2000; Sedlak et al. 1986; Steinberg et al. 1996). Eleven percent of 8th graders, 17 % of 10th graders, and 33 % of 12th graders reported skipping at least one day of school within

4 weeks (National Center for Education Statistics 2002). Furthermore, a very consistent finding among numerous studies is the tendency for academic engagement to steadily decline as students progress through the elementary, middle, and high school years (Eccles et al. 1998; Marks 2000; National Center for Education Statistics 2000; Stipek 2002). One recent nationally representative study found that engagement declines by about 10 % on average from eighth to tenth grade alone (Kelly and Price 2014).

One of the largest such studies is the High School Survey of Student Engagement (HSSSE), which asked 81,499 students in 110 schools within 26 different states the extent to which they agreed with statements such as "I care about my school" and "I am an important part of my high school community." According to a 2006 report (Yazzie-Mintz 2007):

- 75 % of students were bored in class because the material was not interesting.
- 50 % were bored every day.
- 40 % felt that material taught not relevant to live.
- 45 % did not feel to be an important part of the school community.
- 22 % disagreed or strongly disagreed that there was one adult in school who cared about them.
- 55 % spent less than 1 h reading or studying.

Dropping out of school is the ultimate way that disengagement is expressed. According to the 2006 HHSSE, 22 % of students considered dropping out of high school. Among this group, the majority of the students stated that the reasons were because they didn't like school (73 %), didn't like the teachers (61 %), or didn't see the value in their work (60 %), whereas a minority stated that their reasons were personal, like family issues (42 %), and the need to work for money (35 %). It is important to consider that because active students were surveyed, this is among the *survivors*. Nearly one in six students eventually drops out permanently.

For example, one respondent expanded, "This school promotes grades and success very much, but not at all developing individuality or being a good person. All our school really cares about is getting good grades on the standardized tests, not about life after high school" (Yazzie-Mintz 2007, p. 9). Another shared, "I feel that some of these teachers don't like me for who I am" (p. 9). Yet others had more specific complaints, such as "I don't think this school promotes extracurricular activities enough," or identified particular programs that lacked financing and the ability to grow (p. 10). Sadly, true despair was apparent for a significant number of students who believed that filling out the survey was pointless due to their skepticism that conditions in the school would ever change. In short, they were sure their views would never be taken seriously.

An interesting question is whether pervasive disengagement exists in other countries or if it is especially acute in the United States. One of the most comprehensive studies of engagement internationally was performed by the Programme for International Student Assessment (PISA) in 2000, which collected nationally representative samples of questionnaire data from 15-year-olds in 43 countries (Willms 2003). According to the data gathered by PISA 2000, it turns out that disengagement is roughly just as pervasive *globally*. Their report of results states, "There is a

high prevalence of students who can be considered disaffected from school in terms of their sense of belonging or their participation. On average, across the OECD countries, about one in four students are classified as having a low sense of belonging and about one in five students has very low participation. The prevalence of both type of disaffection was higher among non-OECD countries"[4] (Willms 2003, p. 25). In addition, an average of 10 % of students internationally were regularly absent from school, and demonstrated below-average literacy skills. There were many countries with prevalence rates of disengagement both above and below the United States, whose rate of disengagement was about that of the international average, according to the study. The report concludes that "virtually all schools need to deal with problems associated with disaffection, and thus most countries cannot adequately address the problem with interventions that are targeted at particular schools" (Willms 2003, p. 26).

The Status Quo of Schooling

It is argued that schools are breeding grounds for alienation because they do not foster a healthy environment for psychosocial development (National Research Council Institute of Medicine of the National Academies 2004). Therefore, it is important to understand the characteristics and conditions of schools and schooling which most contribute to the current status quo. There appears to be little disagreement, and in fact remarkable similarities, among characterizations of American education as emphasizing efficiency, monolithic teaching practices, and narrow curricula devoid of meaning to the real lives of students (Boyer 1983; Darling-Hammond 1997; Goodlad 1984; Sizer 1984). Students are easily distracted, drifting into space, staring out windows, or engaging in private interactions, but in any event are not completely tuned in to the business at hand.

It is charged that too many students "fall through the cracks," with the bottom half of the achievement distribution in particular left with little idea of how school will benefit them (NRC 2004). An extremely high percentage of American high school students are thought not to take school or their studies seriously (Steinberg et al. 1996). Supporting this claim, for example, one third of students say that they have lost interest in school, are not learning very much, and survive the school day by goofing off with their friends. Forty percent say that they do not pay attention or try very hard when they are in class. They seem to be "just going through the motions" (Steinberg et al. 1996, p. 67); they are physically present but psychologically absent (Yair 2000).

When students do exert effort, it is often as a means to an end—namely, to earn high grades and a degree. Thus, there is the opposite concern that a significant percentage of students take school all too seriously. Looking great on paper, they are in reality bundles of nerves who stressfully claw their way through school just to get

[4]The 28 OECD countries that participated were those belonging to the Organisation for Economic Co-operation and Development, and there were 15 non-OECD countries that also participated in the study.

the grades they feel they need (Pope 2001). Two thirds of students state that they cheated on a school test, and 90 % say they copied someone else's homework, during a single academic year (Steinberg et al. 1996).

One characteristic of the current status quo is that some students find school too difficult, while others become disengaged because it's too easy. Fifty-two percent of students who considered dropping out said that a reason for their disaffection was that the work was too difficult. For the rest of the students, however, only about 20 % of students say their disengagement stems from confusion in difficult courses like math and science. A far higher percentage—nearly one third—of students say they are bored because they are not challenged enough (Yazzie-Mintz 2007). Meanwhile, teachers have been found to lower their expectations in response to student disengagement, causing a vicious, interactive cycle. And because the expectations are so low, it isn't difficult for students to meet them, appearing "engaged enough" (Steinberg et al. 1996, p. 70). The experience of school as lacking in relevance and meaningful challenges is intensified for students in low-income communities and for students with a history of low achievement and behavioral problems (Eccles et al. 1997; Crosnoe 2001).

Asked why they go to school, a minority of students agreed that they did so to acquire skills (47 %) or because they enjoy it (37 %), while the majority of students said that it was because it was the law (58 %), for their peers (68 %), or as a means to the ends of getting a degree and going to college (73 %) (Yazzie-Mintz 2007). It is no less true, however, that in order to become engaged in school, youth need to know that they will acquire some useful knowledge and valuable skills for their efforts and grow in ways that are personally rewarding and fulfilling. Most students correctly believe that getting into a good college depends on grades and that success in the labor force is related to the number of years in school, but they are much less clear on the benefits of paying attention in class and learning what schools are teaching (Steinberg et al. 1996). Although there are known to be children who prefer school to leisure time, most students' motivations for schooling are unmistakably extrinsic. Developing into creative, productive adults leading satisfying lives ultimately depends on the eventual nurturance of intrinsic motives and enjoyment in productive activities (Csikszentmihalyi and Larson 1984).

Adolescents generally report being more dissatisfied with school than any other area of life, with nearly a quarter reporting being dissatisfied and 9 % describing their school experience as "terrible" (Huebner and Diener 2008, p. 380). Almost a third of students say they are bored because there is no interaction with the teacher (Yazzie-Mintz 2007). The resulting disengagement and disaffection shows up in countless ways. Disengagement is thought to be associated with a syndrome of serious problem behaviors for teens, including drug and alcohol use, depression, delinquency, and sexual promiscuity (Steinberg et al. 1996). On a societal level, alienation is believed to contribute to dishonesty, violence, greed, and corruption (Deci 1996). While schools certainly cannot be blamed for this state of affairs, they also so far have been a bigger part of the problem than the solution.

We must stop and ask ourselves one question: *How did this state of affairs ever happen*, especially with all of the knowledge about learning and motivation that we possess today?

The Historical Axiom for Understanding Engagement

In order to answer "how could this happen?" we must ask ourselves one question: When the predominant form and organization of our schools was established, was it *designed* to support learning and motivation of students, or was it designed after some other model? We all intuitively know the answer to that question. Schools *couldn't* have been designed primarily with the goal of supporting student motivation and learning, because they simply are not patterned that way. Teachers no doubt like to think that their primary work is to teach, not to manage. Historically speaking, however, that has never been the case. The first foundational axiom for understanding engagement in schools is therefore historical. For what is a most obvious observation is indeed easily confirmed by historical analysis: *public schools in their predominant form did not evolve primarily to support the learning and development of students* but rather to *manage masses* of students and to *deliver education as a product*, modeled after the hierarchical centralization of industrial bureaucracies.

There was a time in US history when schools were controlled by the community, nongraded, featured mixed-ability interactive instruction of younger students by older ones, offered flexible scheduling, lacked bureaucratic and hierarchical organization, attended to individual differences, welcomed parental visitations, and possessed many other features that are now important goals to reform schools in ways which would enhance engagement. All of this was to be seen in the one-room country schools of nineteenth century (Tyack 1974; Tyack and Tobin 1994). As industrialization, demographic shifts, and urbanization altered country life in the early 1900s, however, rural schools began to teach vocational skills in the form of a standardized, modernized "one best system" designed and led by professionals (Tyack 1974). A chief distinction of the new schools was that they were controlled through a bureaucratic organization. Even back then, the accompanying consolidation and standardization made little sense to actual educators, who grew dissatisfied with new school buildings and an archaic curriculum. However, city and state superintendents, school board leaders, and other central administrators sought to bring order to the chaos of rapid industrialization. They were impressed and excited that the new graded schools featured the division of labor of the factories, punctuality of the railroad, and chain of command of businesses. Thus, the principal influence in shaping the schools that have proven to be virtually impenetrable ever since was *the convergence of industrialization and urbanization in the middle decades of the nineteenth century* (Tyack 1974).

The new "one best system" of schooling brought with it several practices that have since become firmly entrenched. For example, the new system included ability levels, records of attendance, and uniform textbooks. Central offices created increasing controls over students, teachers, principals, and other subordinates in the school hierarchy. Perhaps most saliently from today's perspective, uniform written test provided a single standard by which to measure the "output" of each school, replacing the more personalized and intuitive written evaluations by teachers based on oral examinations. From nearly the moment they were implemented, the tendency

for school children to answer a low percentage of standardized test questions was used as evidence of failure in entire districts. Thus, the seeds of the pervasive educational practices and most vigorous policy debates of today were planted with the very creation of the "one best system."

Make no mistake: "traditional education" is *mass education*. The main reason that bureaucratization gradually replaced the older, decentralized "village pattern" of schooling was *the pressure of large numbers* (Tyack 1974, pp. 38–39). Organization became necessary to deal with crowded and congested conditions. The appeal of the factory model of education was therefore like that of an extremely efficient machine through which students became "processed." Critics scorned that administrators were putting organization ahead of education; but, indeed, the primary value of the new system, from its original inception, was not learning but *order*.

The type of school building required for the batch processing of students has been dubbed the "egg-crate school" (Tyack 1974; Tyack and Tobin 1994). Students were divided by their tested proficiency, large numbers of students were put into a single classroom, and these students were to attend the same exact studies at exactly the same time. Division-of-labor efficiency was obtained by focusing the work of a teacher on a single grade (Tyack and Tobin 1994). Uniform courses were designed to conform to the standardized testing, and uniform curricula were created in which teachers were instructed what questions to ask and what answers to accept. The model was so precise that superintendents in their central office could know what pages of each textbook were being worked on in every school (Tyack 1974). Examinations rather than teachers were relied on to determine whether students were promoted. The "normal" student progressed at the prescribed pace demanded by the imperatives of the school system.

A code of behavior by which students could be most easily managed could be seen as a "hidden curriculum." Like the military code of behavior, it includes *punctuality*, *precision, regularity, attention, a*nd *silence,* as students obeyed the teacher and moved in lockstep in order to avoid punishment or shame. As one critic observed, "To manage successfully a hundred children, or even half that number, the teacher must reduce them as nearly as possible to a unit" (Tyack 1974, p. 54). Such tight social order was preserved through a combination of keeping students busy every minute, competition, extrinsic rewards, superficial praise, and fear. There was the momentary shame or degradation, and the larger fear of becoming one of the "losers" in the system, as some children would inevitably fail to be promoted according to the rules and standards of performance. Corporal punishment and humiliation were not questioned as an appropriate response for failing to learn one's lesson, since academic misconduct or failure was considered a sign of moral laxity. And since spontaneity was also a sign of naughtiness, the more creative children who nevertheless learned to "behave" surely suffered from boredom (Tyack 1974).

This historical account of how modern schools were created may provide some insight for all of those who have ever wondered: Given all the knowledge we have about how humans learn and are motivated, why don't schools teach in a way that is consistent with such principles (American Psychological Association 1997)? One essential answer, at least, appears to be that modern schools were not designed this way.

Fortunately, a variety of infinitely more hopeful models, some of which are highlighted in this book, testify that the organization and dominant practices of schools are not etched in stone. Because the dominant forms of schooling were historical, cultural, and political creations, there is no reason per se that they cannot be changed with different but equally forceful sociohistorical circumstances and political will. But schools and school programs must be designed differently; learning enhancements of course can be helpful, but only as a Band-Aid on a more systemic problem. And there are indeed signs of progress being made with respect to alternative designs for schools and educational programs for youth.

Why Are Students So Disengaged Today?

The ability of schools to engage students is constantly tested by the growing diversity of students, significant numbers of whom demand specialized attention, as well as an increasing number of *powerful distractions* that compete for student attention. As one typical student puts it, "When you go home there's always something you can be doing with your friends besides homework, so you just do enough to get a decent grade but you don't try to get your best grade, you do just enough to finish" (Newmann et al. 1992, p. 15). Teachers must compete for student's attention with parents, siblings, boyfriends and girlfriends, bosses, coaches, salespeople, media figures, and a host of others who touch students' lives. Unlike ever before in history, today's youth are particularly vulnerable to a growing host of distractions, a great deal of which today are Internet-based like extremely popular social media. At the same time, students are also rapidly transforming into self-initiated learners and multitaskers due to the exponential increase in outlets to learn whatever is desired instantaneously on the Internet alone.

The problem of disengagement in schools is properly characterized by the chemical reaction that occurs when the mindset of such students meets the traditional school and the status quo of traditional education just described. There is a notable mismatch between the developmental and intellectual needs of students and the holding environment encountered in middle and high schools (Eccles et al. 1993). Greatly exacerbated by policies focusing mainly on achievement to the neglect of fundamental issue of teaching and learning (Stigler and Hiebert 1999), this mismatch appreciably worsens as students move through adolescence. Teachers must be able to use their judgment in order to best serve students; however, the current policy environment under the No Child Left Behind Act is controlling and coercive. Students are subjected to a prescribed program that is supposed to save them from their ignorance, but they rarely see or understand the direct benefit of their labor to their lives. These circumstances lead to distrust in teachers and other school professionals, which is necessary for students to invest considerable effort in the learning process (Newmann et al. 1992). Instead, students comply with rules and "play the game" of schooling, but then when left to their own devices, their commitment to learning drops significantly.

The poor interaction between students and schools has a few distinctive characteristics. First, the benefits of schooling are not immediately evident to students because they are theorized—by whom no one quite knows—to exist sometime in the distant future. One reason that so many bright and curious people end up hating school is that their happiness is constantly being deferred (Noddings 2003). A second distinctive characteristic is that we constantly tell children to "do their best," but for at least half of them, their best is clearly not good enough, simply because it is not as good as the better half. When at least half of the children attending school are made to feel inferior, there is not only lack of happiness and engagement, but self-esteem also suffers. Thus, unhappiness and disengagement are *actively created* by the system itself.

The research findings make it clear that mainstream public high schools, and especially classrooms, are broken as a system to promote the engagement, learning, and development of youth. While there are a multitude of conditions that surround and are related to this state of affairs, the *central problem* does not seem to be one of resources, class size, curriculum, or assessment, so much as *how teachers are trained and supported to carry out instruction, generally failing to engage and motivate youth, and form meaningful, positive relationships with them* (Shinn and Yoshikawa 2008). Although there have been promising efforts to reform schools, most have focused on structural features like instructional content or building a school within a school. Youth appear to be more concerned with the actual *experience of classrooms* as lacking in (a) meaningful challenges, (b) leading to competence building, (c) in relevant areas of life, (d) in the context of supportive relationships (Crosnoe 2001; Marks 2000; NRC 2004; Roeser et al. 2000; Shernoff et al. 2000).

The Primacy of Engagement

Few would argue that participation in schooling is not essential for positive educational outcomes. Take away participation, and there can be no benefit of schooling. But what is participation? One model based at the Harvard Family Research Project finds that educational outcomes can be explained in large part by a three-part construct of participation, which includes enrollment, attendance, and student engagement (Weiss et al. 2005).

As essential as enrollment and attendance are for positive educational outcomes, research suggests that mere physical presence in a classroom is not the active ingredient for learning. A substantial literature has established that student engagement positively impacts academic performance and achievement (Kelly 2008; Marks 2000; Sirin and Rogers-Sirin 2004; Voelkl 1997; see Fredricks et al. (2004) for a review). Unfortunately, the importance of engagement is therefore reduced to its relationship to achievement. However, engagement is an important outcome of schooling in its own right. Mounting evidence suggests that engagement is a vital protective factor and leads to a host of positive educational and social outcomes and decreases in negative emotions and behaviors (Li et al. 2014; O'Farrell and

Morison 2003). Engagement and disengagement also bring with them very serious and real *consequences*. In terms of disengagement, students who are withdrawn from school are far more likely to have psychological problems ranging from depression and aggression to participation in drugs, alcohol, sex, crime, and delinquency (Steinberg et al. 1996).

Most substantively, a major predictor of achievement in life is what Sternberg (2005) calls "purposeful engagement." Engagement always connotes a relationship—one of involvement—to something. What that "thing" is of course can vary greatly, however, such that the meaning of engagement is always context specific. It is useful here to distinguish between small e "engagement" and capital E "Engagement." Someone can experience one-time (small e) "engagement" in short-term activity (i.e., day-to-day engagement), as well as sustained (capital E) "Engagement" to things much larger, like another person, school in general, or a career. As Csikszentmihalyi and Larson (1984) have suggested, the pattern of (small e) "engagement" one builds in adolescence can have a defining influence on the longer-range (capital E) "Engagement" found to be a predictor of lifetime achievement. This is because patterns of allocating attentional and time resources gradually shape life choices; what results are the priorities and adaptive skills of adults who are either creative and productive or relatively less engaged. When examining the development of grown adults retrospectively, those who have developed lifelong (capital E) Engagement appear to have a long history of experiencing a steady stream of daily engagement in activities found to be intrinsically enjoyable and meaningful (Csikszentmihalyi 1996; Nakamura 2001). Thus, meaning appears to be gradually accrued through a process of engagement.

Unfortunately, the converse is also true: disengagement can dwarf into "capital D" Disengagement, with students from disadvantaged backgrounds being especially "at risk." Internationally as well as in the United States, the social and economic marginalization of children and adolescence living in disadvantaged communities adversely affects school engagement (Willms 2003), often leading to a downward trajectory through the adolescent years (National Center for Education Statistics 2000; Stipek 2002). Many poor urban schools in the United States are riddled with low expectations, inadequate resources, and fragmented services that can engender alienation (Kozol 1991). When students from disadvantaged backgrounds or urban poverty become disengaged, they are less likely to graduate from high school and may face limited options (NRC 2004). Because dropping out of school is often the most visible sign of a gradual cycle of disengagement, the primary theoretical model for understanding school dropout and promoting school completion centers on engagement (Furlong and Christenson 2008). Concentrating on engagement offers hope to educators because it is considered to be malleable and influenced by the environment. Most significantly, there are a number of schools in which students at high risk for disengagement have become highly engaged in learning, achieving at high levels. Although rare, these success stories—often taking place in the context of thematic learning communities with strong expectations for achieving at high standards—should be embraced with enthusiasm. Thus, providing several empirically based examples is a major focus of this book.

Definition of Engagement

Various conceptualizations of engagement will be discussed in Chap. 3; however, the reader may find it useful to offer a working definition of engagement before proceeding further. The definition of engagement that I prefer and use in my research is quite simple: the *heightened, simultaneous experience of concentration, interest, and enjoyment in the task at hand*. I prefer this definition, which obviously refers to the "small e" engagement, for several reasons. Firstly, it includes no presumptions about how students *should* think, feel, behave, or relate to school. In fact, it includes no mention of school whatsoever, so that engagement in academic contexts can be viewed as on par and comparable to that experienced in other less formal contexts. Secondly, and most importantly, the definition is based completely in the experiences of students, so that engagement may be considered *as a learning experience*, one to be valued in its own right.

This definition is rooted in Csikszentmihalyi's (1990) conceptualization of "flow experiences." Flow is an optimal state of cognitive and emotional engagement, so absorbing that one may lose track of time and awareness of the self. The National Research Council writes, "We are not proposing that all high school students be in a constant state of flow, but we have seen youth deeply and enthusiastically engaged in schoolwork and we believe that this high standard should be our goal" (p. 32). Although the nature of schoolwork can vary, the ideal state of engagement is usually active attentiveness and problem solving or the fashioning of products that promotes learning and the development of new skills, an ideal that flow experiences encapsulate.

I am sometimes asked what flow has to do with schools. Undoubtedly, flow and schools are two words that don't go together for most people. However, almost all learning depends on being on a flow state, such that learning—or at least the experience of learning—is nearly synonymous with flow. Therefore, if schools are not created as places where individuals can regularly experience flow, it also follows that they are not set up to regularly experience learning. This is not to say no learning occurs in schools, but rather that such learning is somewhat incidental. Schools are set up to manage masses of students, issue credits and degrees, and to "do" achievement. But as will become clear, this is not the same as being designed to promote engagement in learning. Fortunately, several good examples of educational environments designed specifically for engagement in learning are shared in this book, and in each case, studies show that students are indeed so engaged.

Optimal Learning Environments from the Perspective of Overlapping Fields

This book takes a perspective from the intersection of four emerging, overlapping fields: (1) *student/school engagement*, or motivation and engagement to learn and succeed in school (e.g., Appleton et al. 2008; Furlong and Christenson 2008;

Fredricks et al. 2004; NRC 2004; Shernoff et al. 2003); (2) *youth engagement* in after-school, community, and mentoring programs for youth to improve developmental and academic outcomes (e.g., Eccles and Gootman 2002; Mahoney et al. 2005); (3); *positive youth development,* or all factors leading to positive developmental outcomes for youth (e.g., Larson 2000; Lerner et al. 2005); and (4) *positive psychology,* or factors leading to a happy and satisfying life for all populations (e.g., Peterson and Seligman 2004; Seligman 2002; Seligman and Csikszentmihalyi 2000; Snyder and Lopez 2002). At the intersection is a perspective that values educational approaches emphasizing strengths and well-being rather than deficit-driven and reactive approaches (Gilman et al. 2009).

An emphasis on the "positive" is an essential perspective for addressing serious problems facing today's youth as well as facilitating psychosocial well-being. Despite dominant educational policy, the problems of youth are not all achievement related: the nearly epidemic increases in the percentage of youth with depression (Seligman 1990) and obesity (National Center for Health Statistics 2005) in the last half century have already been mentioned. Well-being, on the other hand, is closely related to engagement. Students who are interested and involved in skill building and productive pursuits score higher on measures of psychological adjustment, including measures of self-esteem, responsibility, competence, and social relations (Steinberg et al. 1996), whereas students who alienated from school are more likely to have behavioral problems ranging from withdrawal to depression to aggression (Jessor and Jessor 1977). The science of human potentialities, and the conditions fostering positive youth development in particular, can be of maximum benefit in evaluating educational environments, where an important outcome is the optimal engagement of youth in order to thrive as individuals.

This book centers on *optimal learning environments.* Optimal learning environments for our purposes are here defined as educational or learning environments with empirical evidence of engaging youth. For many of the studies cited in this volume, the empirical evidence comes from the experience sampling method, a methodology for sampling individuals' subjective experiences at random time points while interacting in their natural environment. No doubt, however, the conceptualizations and measurements of engagement across studies can be quite diverse, and the strength of the evidence may vary. Even with this limitation, however, there may be much value in canvassing these optimal learning environments, observing their characteristics, and exploring what patterns may emerge. While it would be ideal for conceptualizations and measurements of engagement to align, it would be a waste of the present research base to wait for this to occur in order to glean whatever commonalities or patterns may exist among empirically based, engaging environments for the sake of policy makers and practitioners.

In sum, *engagement* provides a useful lens for viewing the promotion of psychological well-being as an important end of education in addition to academic achievement, and examining *optimal learning environments* helps us to discover the characteristics of educational setting that are effective in fostering this end.

Positive Psychology and School Engagement

The positive psychology movement is based on the recognition that the field of psychology has, over the last century, focused most of its attention on the diagnosis and treatment of mental illness: psychoses, neuroses, and various cognitive and behavioral disorders. In its call to focus on the factors contributing to a positive quality of life, it has questioned whether repairing human weaknesses and averting a psychological diagnosis should be the only goal of psychological health. It should not escape us that education can be framed in much the same way. Is it enough to "cure" students of their fundamental intellectual limitation, conceived as a lack of knowledge? Should the primary educational mission be centered around tests to prove that students have been so cured? In fact, the case for emphasizing the positive is perhaps more pronounced for education, since there can be little question that the building of personal strengths, assets, and potentialities is necessarily an *educational* process. Certainly, if Dewey was correct that education is the very process of life, then a fulfilling life is indistinguishably intertwined with education (the aims of education are discussed in greater depth in Chap. 2). And if the building of strengths is the bedrock of the human condition, as positive psychologists argue (Peterson and Seligman 2004), then education is a vital human resource, one that should not be squandered by a narrow focus on fixing limitations.

As Seligman has pointed out, the list of things that most parents want for their children (e.g., happiness, confidence, balance, health, kindness) bares almost no overlap to the list of things parents describe schools as actually teaching (achievement, success, conformity, subject content). And this view is not confined to just parents but extends to students themselves. College students from all around the world rated happiness and life satisfaction as the most important factor in life (Eid and Larsen 2008). People who consider themselves happy are more altruistic, active, like themselves and others more, live longer, and have better physical health and immune systems. For adolescents, well-being appears to be an important protective factor, moderating stressful events and externalizing disorders. Adolescents who are more satisfied with their lives report fewer physical symptoms, less substance abuse, and more productive behaviors (Suldo et al. 2009).

Positive emotions, and the balance or ratio of positive to negative emotions in particular, appear to be salient indicators of both present and future well-being (Diener et al. 1991; Fredrickson 2001). Positive emotions can broaden capacities and personal resources to meet future challenges, manifesting in increased resiliency and coping skills (Fredrickson and Joiner 2002). Frederickson (2001, 2006) refers to this dynamic as the "broaden-and-build" theory of emotions because positive emotions provide a condition for the broadening of momentary thought-action repertoires and the building of personal enduring resources. Fredericks and her colleagues have found that positive emotions serve a therapeutic function by helping to mitigate or undo the effects of negative emotions from adversity or tragic events and help to provide positive interpretations of people and events by placing them in a broader context. Thus, positive emotions not only make people feel better in the present, but

the cumulative and compounding effect of broadening and building capacities transforms individuals for the better, making them healthier, more socially integrated, knowledgeable, and resilient.

From the perspective of positive psychology, happiness is not just a means to an end but also an end in itself. However, how is happiness created, especially in school contexts? In fact, conditions of schooling can be critical antecedents of well-being. In particular, students who are highly satisfied generally have more social support from parents, teachers, and peers (Suldo et al. 2009). Grades, beliefs about learning, school climate, participation in extracurricular activities, and attachment to school also account for a good deal of variation in life satisfaction among students. Interestingly, it appears that most of these factors are markers of youth engagement; engagement is properly understood as a meta-construct that that bridges personal and interpersonal well-being with "doing well" or "success" in school.

Just like the opening of a flower in the warmth of sunlight, those with positive emotions are more open to new experiences, including social interactions and learning new things, both cornerstones of *engagement in learning*. Positive emotions broaden the scope of attention and cognition, activate creative thinking, and foster social competencies like conflict resolution, forging an upward spiral of development. The hypothesis that positive emotions are related to student engagement has been empirically supported. Reschly et al. (2008) found that not only that the frequency of positive emotions was associated with student engagement but also, in support of the broaden-and-build theory, that the association was mediated by broadened cognitive (i.e., problem solving) and behavioral (i.e., social support seeking) coping strategies. The study suggested that positive emotions are important for coping and engagement in school, despite receiving little attention from researchers and practitioners alike.

Both engagement and a sense of meaning are at the very center of education facilitating positive psychology among individuals, which has been dubbed "positive education" (Seligman et al. n.d.). Positive psychology divides happiness or the "Good Life" into three different realms. The first is hedonic: positive emotion or the "Pleasurable Life." As this realm involves the satisfying or satiation of physical appetites and urges, education plays the least significant role in it. The second can be referred to as the "Engaged Life" (Seligman et al. n.d.). Flow, or becoming totally absorbed in an activity to the point of losing self-consciousness and a sense of time, is a central experience of "the Engaged Life" (Seligman et al. n.d.). The key recognition here is that well-being is clearly synergistic with engagement in learning. The third realm is the pursuit of meaning or purpose, or the "Meaningful Life," through one's connections to others, commitment to future generations, and service to communities or institutions. Essentially, if education were concerned with the happiness and well-being of the younger generation, then according to positive psychology, engagement and purposeful activity need to be at the center of education.

The positive psychology movement can also be of maximum benefit in rethinking and reforming education due to its emphasis on *signature character strengths*. Helping students to identify and employ their signature strengths (Seligman 2002)

is highly consistent with Einstein's value of individuality in society, and is supportive of his educational aim of training "independently acting and thinking individuals" (Einstein 1954, p. 60). In other words, schools need to focus primarily on the fulfillment of the individual in all of its multidimensional forms: awakening the individual's yearnings and callings, stimulating the individual's sense of excitement, facilitating the individual's personal discoveries, and invigorating the individual's strengths.

Positive psychology is equally beneficial for its emphasis on *values.* "Not learning values" was cited as the most important problem facing youth today, according to adults in the United States surveyed by Public Agenda in 1999 (Peterson and Seligman 2004, p. 5). The thirst for values in education has led to the movement in recent years for "character education." Character education has been criticized in approach, but the need for education to address values is nevertheless widely perceived.

A great deal of the learning of values and virtues is done *indirectly*, through observation, modeling, and interfacing within communities adhering to certain norms (Nakamura and Shernoff 2009). The learning of values, beliefs, and virtues is often part of an inherited culture. According to Dewey (1897/1973), this kind of learning *is* education in the grand scheme of things:

> I believe that all education proceeds by the participation of the individual in the social consciousness of the race. This process begins unconsciously almost at birth, and is continually shaping the individual's powers, saturating his consciousness, forming his habits, training his ideas, and arousing his feelings and emotions. Through this unconscious education the individual gradually comes to share in the intellectual and moral resources which humanity has succeeded in getting together. He becomes an inheritor of the funded capital of civilization. The most formal and technical education in the world cannot safely depart from this general process. It can only organize itor differentiate it in some particular direction. (p. 443)

Positive Youth Development and School Engagement

Falling under the general umbrella of positive psychology, the related but somewhat more specialized movement of *positive youth development* has introduced a new vocabulary in its emphasis on the strength, moral development, and community programs for youth development with phrases such as such as "thriving," "civic engagement," "initiative," "assets," and "voluntary, structured activities" (Larson 2000; Lerner 2004). A primary tenet of this movement is not that "that every child can achieve," as narrowly defined by No Child Left Behind legislation, but that every child *has the potential for healthy development*. In fact, this latter assertion is far more true than the former, since unlike achievement as defined by relative success in a competitive system, health is not a scarce resource that some will fail to receive as function of the success of others.

Engagement is also a central variable within the positive youth development framework. In a number of system-level theories (e.g., Bronfenbrenner 1979; Connell and Wellborn 1991; Sameroff 1983), engagement is represented as the behavioral interactions with contexts, resulting in increases or decreases in the

support received from those contexts as well as subsequent engagement. Engagement is particularly sensitive to the variations in developmental assets provided by school, community, and other environmental contexts and amenable to intervention efforts (Reschly et al. 2008). As an extreme, negative example, when developmental assets are lacking, students may disengage from the school context through disruptive or delinquent behaviors, ultimately culminating in school dropout. At this point, the health, social, and civic resources of the school are completely unavailable to support development, and there is no further engagement with the context.

Of course, the goal of youth engagement is more positive and interactive cycles. Ultimately, involvement in a context can be represented as a continuum ranging from total disengagement to flourishing. Key to flourishing is engagement with the resources of families, schools, and communities that foster physical safety and security, developmentally appropriate structure and expectations for behavior, emotional and moral support, and opportunities to make a contribution to one's community (Eccles and Gootman 2002). Of all the assets that have been systematically examined, time spent in quality out-of-school time (OST) and other youth programs was the most influential factor influencing the thriving of youth due to opportunities for youth to be engaged in meaningful activities such as community projects with adults (Lerner et al. 2008; Scales et al. 2000). Given the unique role of OST programs in positive youth development, they are the focus of Chaps. 12 and 13.

Towards Optimal Learning Environments: Is Meaningful Change for Schools Possible (This Time)?

The history of school reform in the United States leaves very little room for optimism of sustained change on a wide, system-level scale. Even most optimistically, meaningful change will likely be slow and gradual. However, there are forces at our present juncture of history that may indeed point to our turning a corner for the first time in the quest for change. The three greatest factors accounting for this possibility are as follows: (a) the national need for full-day care of children for working parents; (b) the speed of new emerging technologies, including educational technologies; and (c) the availability of empirically based alternative models, such as those illustrated in this book, that are effectively responding to changes in conditions while traditional public institutions become increasingly outdated and ineffective in meeting the needs of students.

Fewer young people now grow up in families in which both parents are present to share the responsibilities involved in bringing up children. According to the Employment Policy Foundation's Center for Work and Family Balance, the percentage of working households consisting of single-earner married couples decreased from 66 % to less than 25 % between 1940 and 2000. By 2030, the center estimates that a mere 17 % of households will conform to the traditional "Ozzie and Harriet" model (Clay 2005). While the entry of more and more women into the workforce has

changed the landscape of the American family, public response to these changes has lagged. Schools in general have remained oblivious to the fact that 80 % of students now have working mothers, closing their doors to this demographic reality during the summer months, for example. In 2009, President Obama called for expanded learning time in schools (Post 2012). A debate will inevitably ensue about the form that an expanded school day will take. This alone certainly does not guarantee meaningful change with respect to the fundamental design, goals, and organization, but if schools must reorganize to create additional time, the door may open to this possibility. This issue will be discussed in greater depth in Chaps. 12 and 15.

With respect to technology, a proliferation of distance learning offerings, educational video games, and a variety of interactive multimedia and Internet technologies are increasingly offering the population more options to meet their educational needs. At the same time, the learning styles of the younger generation are becoming increasingly visual and interactive. The lightening speed at which new technologies have emerged and have become available to youth has quickly transformed schools from the main if not only source of specialized knowledge to one of the least effective and efficient places in which learning occurs. For the first time, students will have the ability to vote with their feet, or at least their computer mouses, and the traditional model of education may gradually crumble if it continually fails to keep pace with the times. In addition to technologies, traditional education will also continue to be challenged by competition from a variety of angles, including for-profit educational corporations, private schools, charter schools, and policies that are friendly to such alternatives (e.g., voucher programs).

However, a great source of hope with respect to educational improvement resides in individual schools and programs that serve as models. Perhaps one of the greatest virtues of the United States is that pockets of creativity and innovation can often be found that diverge from the mainstream practices of the masses. Research is becoming available that increasingly make obvious that certain alternative educational models have notable advantages to the traditional one, especially in terms of their power to engage youth. We focus on these *optimal learning environments* in the pages to come. An operational definition of optimal learning environments is educational or learning environments that engage youth in learning and/or skill building as demonstrated by research. In Chaps. 6–9 of this book, we focus on environmental features of optimal learning environments in the classroom context. Then, in Chaps. 10–14, we highlight and describe in detail several whole school and after-school models of optimal learning environments.

The Organization of This Book

Because it is difficult to have a meaningful discussion of educational issues without references to the aims of education, Chap. 2 will provide a discussion of aims in education, with emphasis on Albert Einstein's "theory of education." Chapter 3 presents the conceptualization of engagement providing the foundation for the rest

of this book. A methodology for studying engagement is delineated in Chap. 4, and factors influencing student engagement in classrooms in American public schools are identified, leading to a conceptual model of both the antecedents and outcomes associated with engagement. Chapter 5 focuses on individual factors that influence students' engagement and the relationship between engagement and achievement.

In Chaps. 6–9, optimal learning environments in classroom learning is described in more detail as we consider the "how" (how students become engaged and how teachers engage students), "who" (to whom students are engaged), and "what" (to what students are engaged, or the contents of students' engagement) of engagement. We will explore the teachers' role in designing and implementing instructional methods and pedagogical approaches methods that enhance or undermine engagement in Chap. 6. The salience of supportive relationships is then considered in Chap. 7. Chapters 8 and 9 then identify several alternative approaches enhancing engagement for the core academic subjects and nonacademic subjects, respectively.

In Chaps. 10–14 of this book, empirically based models fostering engagement are presented and discussed. Chapter 10 presents the Montessori approach to education as well as some other private school models facilitating engagement. Chapter 11 presents several examples of alternative public schools found to engage youth. Chapter 12 considers the importance of out-of-school time programs as a unique context for youth engagement, and what can be learned from them, and Chap. 13 proceeds to present several examples of after-school programs that promote engagement. Technology-driven advances that impact engagement are then the topic of Chap. 14. This book concludes in Chap. 15 with insights and recommendations for educators, social workers, researchers, parents, and policy makers and a discussion of some of the issues that will likely surround the future of school-based educational programs for youth including trends towards expanded learning time (ELT).

In this book, engagement becomes a lens for confronting some broader educational issues and challenges facing us today. The reader is invited to "connect the dots" among perspectives from educational psychology and learning theory, theories of motivation, history, philosophy, cultural and biological evolution, as well as the more specialized fields of research of student engagement, youth engagement, positive psychology, and positive youth development. It is of course necessary to adopt specific emphases in taking into account a variety of perspectives and paradigms. This book therefore does not focus exclusively but rather *emphasizes* the following: flow research, and especially that using the experience sampling method (ESM), and secondarily the broader engagement literature; the adolescent period of development, meaning middle and high schools over grammar and elementary schools; programs with strong and direct empirical evidence on engagement measures specifically; new or current programs and research in the United States; and thick descriptions of the research and design of a few selected programs over superficial treatments of many in order to be of maximum benefit to practitioners. The emphasis, then, is on adolescents' experiences of high engagement in educational programs in the United States and some of the better empirically based models illustrating this. The hope is to encourage schools to increase their orientation towards behavioral and academic engagement through intentional programmatic

and curricular strategies—meaning to increase or renew their investments in relationship building, school spirit, safety, and a positive climate to improve a diversity of positive educational outcomes.

References

Agnew, R. (2008). *Juvenille delinquency: Causes and control*. Oxford: Oxford University Press.

Alliance for Excellent Education. (2009). *Fact sheet: High school dropouts in America.* http://www.all4ed.org/files/GraduationRates_FactSheet.pdf. Accessed 28 Sept 2009.

American Psychological Association. (1997). *Learner-centered psychological principles: A framework for school redesign and reform.* http://www.cdl.org/resource-library/articles/learner_centered.php. Accessed 13 Oct 2010.

Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools, 45*(5), 369–386.

Bloom, B., & Dey, A. N. (2006). Summary health statistics for U.S. children: National Health Interview Survey, 20004. *Vital Health Statistics, 227*, 1–85.

Boyer, E. L. (1983). *High school: A report on secondary education in America*. New York: Harper and Row.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

Clay, R. A. (2005). Making working families work. *Monitor on Psychology, 36*(11), http://www.apa.org/monitor/dec05/work.html. Accessed 30 Sept 2009.

Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *Self processes and development* (The Minnesota symposium on child psychology, Vol. 23, pp. 43–77). Hillsdale: Erlbaum.

Crosnoe, R. (2001). Academic orientation and parental involvement in education during high school. *Sociology of Education, 74*(3), 210–230.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Perennial.

Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. New York: HarperCollins.

Csikszentmihalyi, M., & Larson, R. (1984). *Being adolescent: Conflict and growth in the teenage years*. New York: Basic Books.

Darling-Hammond, L. (1997). *The right to learn: A blueprint for creating schools that work*. San Francisco: Jossey-Bass.

Deci, E. L. (1996). *Why we do what we do*. New York: Penguin.

Dewey, J. (1897/1973). My pedagogic creed. In J. J. McDermott (Ed.), *The philosophy of John Dewey* (pp. 442–454). Chicago: University of Chicago Press.

Diener, E., Sandvik, E., & Pavot, W. (1991). Happiness is the frequency, not the intensity, of positive versus negative affect. In F. Strack (Ed.), *Subjective well-being: An interdisciplinary perspective* (pp. 119–139). Elmsford: Pergamon Press.

Dooley, S. (2009). *2009 college graduates find jobs harder to land.* http://www.qctimes.com/news/local/article_ef66ecee-6394-11de-bf00-001cc4c03286.html. Accessed 28 Sept 2009.

Eccles, J. S., & Gootman, J. A. (2002). *Community programs to promote youth development*. Washington, DC: National Academy Press.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., et al. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist, 48*(2), 90–101.

Eccles, J. S., Lord, S. E., Roeser, R. W., Barber, B. L., & Jozefowicz, D. M. H. (1997). The association of school transitions in early adolescence with developmental trajectories during high school.

In J. Schulenberg, J. L. Maggs, & K. Hurrelmann (Eds.), *Health risks and developmental transitions during adolescence* (pp. 283–321). Cambridge/New York: Cambridge University Press.
Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In N. Eisenberg (Ed.), *Handbook of child psychology* (Vol. 3, pp. 1017–1095). New York: Wiley.
Eid, M., & Larsen, R. J. (2008). *The science of subjective well-being*. New York: The Guilford Press.
Einstein, A. (1954). *Ideas and opinions* (Modern Library ed.), New York: Modern Library.
Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*, 59–109.
Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218–226.
Fredrickson, B. L. (2006). The broaden-and-build theory of positive emotions. In M. Csikszentmihalyi & I. S. Csikszentmihalyi (Eds.), *A life worth living: Contributions to positive psychology* (pp. 85–103). New York: Oxford University Press.
Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science, 13*(2), 172–175.
Furlong, M. J., & Christenson, S. L. (2008). Engaging students at school and with learning: A relevant construct for all students. *Psychology in the Schools, 45*, 365–368.
Gates, H. L. (2007). *The last word*. San Francisco: Wiley.
Gilman, R., Huebner, E. S., & Furlong, M. J. (Eds.). (2009). *Handbook of positive psychology in schools*. New York: Routledge.
Goffman, E. (1961). *Asylums: essays on the social situation of mental patients and other inmates*. New York: Doubleday.
Goodlad, J. I. (1984). *A place called school: Prospects for the future*. New York: McGraw-Hill.
Hibell, B., Guttormsson, U., Ahlstrom, S., Balkakiereva, O., Bjarnason, T., Kokkevi, A., & Kraus, L. (2004). *The ESPAD Report 2003: Alcohol and other drug use among students in 35 European countries*: The Swedish Council for Information on Alcohol and Other Drugs (CAN) and Council of Europe Pompidou Group.
Huebner, E. S., & Diener, C. (2008). Research on life satisfaction of children and youth. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 376–392). New York: The Guilford Press.
Jackson, P. W. (1968). *Life in classrooms*. New York: Holt, Rinehart & Winston.
Jessor, R., & Jessor, S. (1977). *Problem behavior and psychosocial development: A longitudinal study of youth*. New York: Academic.
Johnson, L. S. (2008). Relationship of instructional methods to student engagement in two public school settings. *American Secondary Education, 36*, 69–87.
Jones, J. N. (2008). *The influence of school identification on participation and engagement in an alternative high school: An interpretive ethnography.* Paper presented at the annual meeting of the American Educational Research Association, New York.
Kelly, S. (2008). Race, social class, and student engagement in middle school English classrooms. *Social Science Research, 37*(2), 434–448.
Kelly, S., & Price, H. (2014). Changing patterns of engagement in the transition to high school. In D. J. Shernoff, & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbooks by Teachers College Record.
Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*(7), 262–273.
Kozol, J. (1991). *Savage inequalities* (1st ed.). New York: Crown.
Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55*(1), 170–183.
Lerner, R. M. (2004). *Liberty: Thriving and civic engagement among America's youth*. Thousand Oaks: Sage.
Lerner, R. M., Lerner, J. V., Almerigi, J. B., Theokas, C., Phelps, E., Gestsdottir, S., et al. (2005). Positive youth development, participation in community youth development programs, and community contributions of fifth-grade adolescents: Findings from the first wave of the 4-H study of positive youth development. *Journal of Early Adolescence, 25*(1), 17–71.

Lerner, R. M., Lerner, J. V., Phelps, E., et al. (2008). *The positive development of youth: Report of the findings from the first four years of the 4-H study of positive youth development.* http://ase.tufts.edu/iaryd/documents/4HStudyAnnualReport2008.pdf. Accessed 2 Oct 2009.

Lewinsohn, P. M., Rohde, P., Seeley, J. R., & Fischer, S. A. (1993). Age-cohort changes in the lifetime occurrence of depression and other mental disorders. *Journal of Abnormal Psychology, 102*(1), 110–120.

Li, Y., Bebiroglu, N., Phelps, E., Lerner, R. M., & Lerner, J. V. (2014). Out-of-school time activity participation, school engagement, and positive youth development: Findings from the 4-H study of positive youth development. *Journal of Youth Development*.

Luthar, S. S. (2003). The culture of affluence: Psychological costs of material wealth. *Child Development, 74*(6), 1581–1593.

Luthar, S. S., & D'Avanzo, K. (1999). Contextual factors in substance use: A study of suburban and inner-city adolescents. *Development & Psychopathology, 11*(4), 845–867.

Mahoney, J. L., Larson, R. W., & Eccles, J. S. (Eds.). (2005). *Organized activities as contexts of development: Extracurricular activities, after-school and community programs*. Mahwah: Lawrence Erlbaum.

Marks, H. M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle and high school years. *American Educational Research Journal, 37*(1), 153–184.

Nakamura, J. (2001). The nature of vital engagement in adulthood. In M. Michaelson & J. Nakamura (Eds.), *Supportive frameworks for youth engagement* (pp. 5–18). San Francisco: Jossey-Bass.

Nakamura, J., & Shernoff, D. J. (2009). *Good mentoring: Fostering excellent practice in higher education*. San Francisco: Jossey-Bass.

National Center for Education Statistics. (1993). *Drop-out rates in the United States*. Washington, DC: U.S. Department of Education.

National Center for Education Statistics. (2000). *Dropout rates in the United States: 1999*. Washington, DC: U.S. Government Printing Office.

National Center for Education Statistics. (2002). *The condition of education* (No. NCES 2002-025). Washington, DC: U.S. Department of Education.

National Center for Health Statistics. (2005). *Prevalence of overweight among children and adolescents: United States, 1999–2002.* http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overwght99.htm. Accessed 21 June 2006.

National Research Council Institute of Medicine of the National Academies. (2004). *Engaging schools: Fostering high school students' motivation to learn*. Washington, DC: The National Academies Press.

Newmann, F. M., Wehlage, G. G., & Lamborn, S. D. (1992). The significance and sources of student engagement. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 11–39). New York: Teachers College Press.

Noddings, N. (2003). *Happiness and education*. Cambridge, UK: Cambridge University Press.

O'Farrell, S. L., & Morison, G. M. (2003). A factor analysis exploring school bonding and related constructs among upper elementary students. *The California School Psychologist, 8*, 53–72.

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. Washington, DC: American Psychological Association.

Pope, D. C. (2001). *Doing school: How we are creating a generation of stressed-out, materialistic, and miseducated students*. New Haven: Yale University Press.

Post, T. W. (2012). *Transcript: Obama speaks to the U.S. Hispanic Chamber of Commerce.* http://www.washingtonpost.com/wp-srv/politics/documents/Obama_Hispanic_Chamber_Commerce.html. Accessed 11 July 2012.

Reschly, A. L., Huebner, E. S., Appleton, J. J., & Antaramian, S. (2008). Engagement as flourishing: The contribution of positive emotions and coping to adolescents' engagement at school and with learning. *Psychology in the Schools, 45*(5), 419–431.

Roeser, R. W., Eccles, J. S., & Sameroff, A. J. (2000). School as a context of early adolescents' academic and social-emotional development: A summary of research findings. *Elementary School Journal, 100*, 443–471.

Roy, J., & Mishel, L. (2008). Using administrative data to estimate graduation rates: Challenges, proposed solutions and their pitfalls. *Education Policy Analysis Archives, 16*, 2–27.

Sameroff, A. J. (1983). Developmental systems: Contexts and evolution. In P. H. Mussen (Ed.), *Handbook of child psychology* (4th ed.). New York: Wiley.

Scales, P. C., Benson, P. L., Leffert, N., & Blyth, D. A. (2000). Contribution of developmental assets to the prediction of thriving among adolescents. *Applied Developmental Science, 4*(1), 27–46.

Sedlak, M. W., Wheeler, C. W., Pullin, D. C., & Cusick, P. A. (1986). *Selling students short: Classroom bargains and academic reform in the American high school*. New York: Teachers College Press.

Seligman, M. E. P. (1990). *Learned optimism: How to change your mind and your life*. New York: Pocket Books.

Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.

Seligman, M. E. P., Ernst, R. M., Gillham, J., Reivich, K., & Linkins, M. (n.d.). *Positive education*. Unpublished manuscript, Philadelphia.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5–14.

Shernoff, D. J., & Schmidt, J. A. (2008). Further evidence of an engagement-achievement paradox among U.S. High school students. *Journal of Youth and Adolescence, 36*, 891–903.

Shernoff, D. J., Knauth, S., & Makris, E. (2000). The quality of classroom experiences. In M. Csikszentmihalyi & B. Schneider (Eds.), *Becoming adult: How teenagers prepare for the world of work* (pp. 141–164). New York: Basic Books.

Shernoff, D. J., Csikszentmihalyi, M., Schneider, B., & Shernoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18*(2), 158–176.

Shinn, M., & Yoshikawa, H. (Eds.). (2008). *Toward positive youth development: Transforming schools and community programs*. Oxford, UK: Oxford University Press.

Sirin, S. R., & Rogers-Sirin, L. (2004). Exploring school engagement of middle-class African American adolescents. *Youth & Society, 35*(3), 323–340.

Sizer, T. R. (1984). *Horace's compromise: The dilemma of the American high school*. Boston: Houghton Mifflin.

Smyth, J., & Fasoli, L. (2007). Climbing over the rocks in the road to student engagement and learning in a challenging high school in Australia. *Educational Research, 49*(3), 273–295.

Snyder, C. R., & Lopez, S. J. (Eds.). (2002). *Handbook of positive psychology*. Oxford: Oxford University Press.

Steinberg, L., Brown, B. B., & Dornbusch, S. M. (1996). *Beyond the classroom: Why school reform has failed and what parents need to do*. New York: Simon & Schuster.

Sternberg, R. J. (2005). Intelligence, competence, and expertise. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation*. New York: Guilford Press.

Stigler, J. W., & Hiebert, J. (1999). *The teaching gap: Best ideas from the world's teachers for improving education in the classroom*. New York: Free Press.

Stipek, D. J. (2002). *Motivation to learn* (4th ed.). Boston: Allyn & Bacon.

Suldo, S. M., Huebner, E. S., Friedrich, A. A., & Gilman, R. (2009). Life satisfaction. In R. Gilman, E. S. Huebner, & M. J. Furlong (Eds.), *Handbook of positive psychology in schools* (pp. 27–35). New York: Routledge.

The Afterschool Alliance. (n.d.). *Working families and afterschool: A special report from America after 3 PM: A household survey on afterschool in America.* http://www.afterschoolalliance.org/press_archives/Working_Families_Rpt.pdf. Accessed 28 Sept 2009.

Tyack, D. B. (1974). *The one best system*. Cambridge, MA: Harvard University Press.

Tyack, D. B., & Tobin, W. (1994). The "grammar" of schooling: Why has it been so hard to change? *American Educational Research Journal, 31*(3), 453–479.

U.S. Bureau of the Census. (2007). *Income, poverty, and health insurance coverage in the United States* (pp. 60–65).

Voelkl, K. E. (1997). Identification with school. *American Journal of Education, 105*(3), 294–318.

Weiss, H. B., Little, P. M. D., & Bouffard, S. M. (2005). More than just being there: Balancing the participation equation. *New Directions for Youth Development, 105*, 15–31. doi:10.1002/yd.105.

Wickramaratne, P. J., Weissman, M. M., Leif, P. J., & Holford, T. R. (1989). Age, period and cohort effects on the risk of major depression: Results from five United States communities. *Journal of Clinical Epidemiology, 42*, 333–343.

Willms, J. D. (2003). *Student engagement at school: A sense of belonging and participation: Results from PISA 2000*. Paris: Organisation for Economic Co-operation and Development.

Yair, G. (2000). Educational battlefields in America: The tug-of-war over students' engagement with instruction. *Sociology of Education, 73*, 247–269.

Yazzie-Mintz, E. (2007). *Voices of students on engagement: A report on the 2006 high school survey of student engagement*. Bloomington: Center for Evaluation & Education Policy.

Chapter 2
Aims of Education Revisited (Einstein's $E = MC^2$ of Education)

> *… The aim (of education) must be the training of independently acting and thinking individuals, who, however, see in the service of the community their highest life problem.*
>
> —Albert Einstein

Introduction

Schooling cannot be evaluated nor improved without reference to the aims of education. Although the balance of this book emphasizes empirical evidence, the aims of education are necessarily philosophical. They cannot be proven or disproven; they are to some degree morally relative as rooted in societal values. This chapter presents a perspective on the aims of education from the little-known educational philosophy of Albert Einstein. The philosophical foundation presented will help to anchor the perspective on engagement and psychosocial well-being that follows. While multiple aims of education must coexist, and specific meanings and interpretations must change over time as conditions change, a comprehensive statement of aims can provide a useful foundation on which to build. Einstein's views on educational aims strike an unusual balance between nurturing individual and social potentialities, and his insights regarding motivation to learn, create, and achieve are equally illuminating. His views are largely supportive of a conceptualization of student engagement rooted in positive youth development presented in this book, in which engagement is frequently spurred by autonomous and authentic contribution to problem solving or the fashioning of products of value to the community. These views are also compatible with much of contemporary, "constructivist" thought about learning processes, although so far those principles have encountered obstacles to widespread employment in educational practice, as also discussed in this chapter. The chapter concludes by introducing additional axioms of engagement building on the historical axiom presented in Chap. 1: the importance of interpersonal relationships as a primary influence on engagement, the function of schools as

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subservient to institutional and economic structures, and the usefulness of finding an organization and larger purpose of human activity in conceptions of human evolution.

A few philosophical observations may be helpful first. Most importantly, despite the historical model of schools as serving the masses, a mass is not an entity that learns. Only an individual, not a group, can have a thought or an idea. As Einstein recognized, "Only a free individual can make a discovery. Can you imagine an organization of scientists making the discoveries of Charles Darwin?" (Einstein 1945). Of course, a collection of well-coordinated individuals can work together and build on ideas and discoveries, such that the total production is greater than the sum of the parts. The point here is that, strictly speaking, *there is no such thing as mass consciousness*. Or as Einstein put it, "It is only to an individual that a soul is given" (Einstein 1954, p. 43). This is an especially important philosophical observation for teachers, because they are prone to thinking and talking to their class as though a single class consciousness exists. Reprimanding a class, for example, unless it applies equally to all students, is always based on this philosophical fallacy. The tendency to take answers from individual students in the class as a sign of "the class's" competency (which of course does not exist) is another common example.

A very different philosophical observation was frequently articulated by John Dewey. Dewey observed that people learn as they participate in social and economic systems like the home or the community. Such participation was made meaningful by useful, necessary, and purposeful nature of tasks performed to serve those systems. He believed that a serious danger of traditional schools was the learning of knowledge and skills outside of their useful context, deprived of vibrancy, meaning, and purpose (Dewey 1937/1946). Dewey's view of ideal learning in school was different from learning in the community only in that it was slightly more intentionally directed. "Intentionally directed" means that the environment was to be carefully prepared by educators who recognized that a *prepared environment* is the chief means of educating in the traditions of Rousseau (1762/1979) and Montessori (1964) (see Chap. 10 for a fuller discussion of Montessori principles). However, the school was not fundamentally different from an ideal society, or democracy; on the contrary, as the members of the school community grew, they would be inevitably nourished and sustained in and by a democratic society (Dewey 1966). Note that this vision is a more radical departure from conventional schooling than current "constructivists" perspectives towards "contextualized learning" (Brown et al. 1989; Cordova and Lepper 1996; Steffe and Gale 1995), which Dewey might rightly interpret as a backlash of the decontextualized learning of schools. Ryan and Powelson (1991) used the following analogy to describe modern attempts to contextualize learning:

> Perhaps "wonder bread" provides the appropriate analogy for this scenario. Grain rich in vitamins and nutriments is stripped out of them, but once it is bleached and sterilized, its makers are compelled to reintroduce some of these nutriments back into the recipe. Accordingly, vitamins are artificially added in order to build healthy bodies in the proverbial "12 ways". By analogy, with the invention of institutionalized schooling, learning and development are removed from rich natural contexts and, in order to build healthy minds educators have to reintroduce some of the relational elements that provided nutriment for learning in the first place (p. 64).

The recognition that individuals are the units who learn, think, and create, as expressed by Einstein, and that schools ideally nurture and serve communities, as expressed by Dewey, sets up a central philosophical question regarding the aim of education, if not *the* question: Should the goals of education serve primarily the welfare and development of the individual (student), or in the collective welfare of the community or society? It argued, on the one hand, that too much time and money is spent on personal growth, life skills, and nonessential subjects (i.e., other than math, science, language arts, and social studies) at the expense of collective achievement and competitiveness (The National Commission on Excellence in Education 1983); and on the other, that the real educational challenge is in meeting the needs of diverse learners, understanding that the curriculum must adapt to the backgrounds, strengths, and interests of individual students (Gardner 1993, 2006; Tomlinson 1995; Tomlinson and Germundson 2007). This is not a trivial debate. In fact, the history of educational reform in the United States can be viewed as a pendulum that has swung back and forth between an emphasis on individual freedom, development, and spontaneity and an opposing emphasis on high expectations to master "the basics" whenever individual freedom became to be perceived as too costly to the goal of collective or national superiority on those basics (Kaestle 1985). Therefore, the tension remains a central educational problem to be solved.

Fortunately, Einstein was not a bad problem solver, and proposed an aim of education that struck an unusual balance between individual and communal values.

Einstein's Proposed Aim of Education (or his "E = MC² of Education")

Laurence McMillin (n.d.), a revered master teacher and personal mentor profoundly influencing generations of students (see Shernoff 2001/2012), wrote an unpublished book manuscript titled, *Einstein's Theory of Education – Learning as a Creative Activity.* In it, he conceived of Einstein's aim as the key to his "theory of education," analogous to $E = MC^2$ as the key to his theory of Special Relativity. Einstein's less known educational "theory" was summarized in an address titled "On Education," on October 15, 1936. Einstein (1954) stated:

> Sometimes one sees in the school simply the instrument for transferring a certain maximum quantity of knowledge to the growing generation. But that is not right. Knowledge is dead; the school, however, serves the living. It should develop in the young individuals those qualities and capabilities which are of value for the welfare of the commonwealth. But that does not mean that individuality should be destroyed and the individual becomes a mere tool of the community, like a bee or an ant. For a community of standardized individuals without personal originality and personal aims would be a poor community without possibilities of development. On the contrary …
>
> … *the aim must be the training of independently acting and thinking individuals, who, however, see in the service of the community their highest life problem* …. (p. 60, italics added).

Einstein's centering of educational aims around the training of independently directed individuals is certainly consistent with Dewey's child-centered education.

Around the turn of the twentieth century, Dewey asserted that shifting the center of education from the curriculum to the child would be like the Copernicus Revolution, when the astronomical center shifted from the earth to the sun (Dewey 1900/1990). Dewey's thoughts on the balance between individual and social aims of education were remarkably similar to Einstein's. Dewey believed,

> If we eliminate the social factor from the child we are left with only an abstraction; if we eliminate the individual factor from society, we are left only with an inert and lifeless mass. Education, therefore, must begin with a psychological insight into the child's capacities, interests, and habits …. These powers, interests, and habits must be continually interpreted – we must know what they mean. They must be translated in terms of their social equivalents – into terms of what they are capable of in the way of social service. (Dewey 1897/1973, p. 445).

The educational imperative to focus on individuals (including their social proclivities) is well recognized in the actual practices of master teachers like McMillin, who frequently distinguish themselves by carefully observing and assessing individual students to identify their talents and interests (Shernoff 2001/2012). This ability, while rare, may be one of the most valuable services high quality teachers bring to the table, particularly important for discovering the work or occupations that an individual student is well suited for and enjoys. In fact, it was Plato's conviction that the *well-being of the individual and community are both served when students discover the work that they love* since this is when individuals are most happy and when society is best organized (Dewey 1916/1944). Furthermore, Plato believed that it was a primary function of education to put students' capacities into effective use, or as Dewey put it, translate them into their "social equivalents."

A master simplifier, Einstein's integration of both personal and social potentialities was derived by compressing the grand sweep of our cultural heritage:

> (Ours) is a culture which has been nourished by two sources. The first derives from the spirit of ancient Greece, renewed and supplemented by the Italian Renaissance. It challenges the individual to think, observe, and create. The second derives from Judaism and primitive Christianity. It is characterized by the motto: Protect your conscience by selfless service to mankind. In this sense we may speak of our culture as having evolved from both creative and moral sources. (Einstein 1960, p. 161).

Einstein worried that as the first source historically exerted increasing influence, the second became increasingly neglected:

> Down until the end of the Middle Ages cultural life derived its strength solely from the second, or moral, source. What resulted was a meager but stable culture. During the Renaissance, the wellsprings of man's creativity began to flow more freely, and ever more richly burgeoning culture ensued which, from generation to generation, down to our own day, has provided an unending source of inspiration. The consequence of this exciting evolution has been the creation of a powerful civilization and technology, together with very large increases in population and a rising physical and intellectual standard of living. We had apparently forgotten that the moral source remains vital to our existence. Now, however, we are dismayed to realize that this source has lost much of its power and that, without it, we are hopelessly doomed. (Einstein 1960, p. 161).

Schools have a tremendous opportunity if not a responsibility to address this problem, and certainly many efforts are already under way. Therefore, several

current models of youth engagement that focus on community service and civic engagement may help in restoring the cultural imbalance to which Einstein referred, in addition to fostering a sense of purpose beyond one's self. Einstein's formulation of what schools should "train" students to do is the equivalent of "thriving" from the perspective of modern conceptions of positive youth development. Lerner (2004) defines a thriving young person as an individual who "takes action to serve her own well-being and, at the same time, the well-being of parents, peers, community, and society" (p. 4). Lerner's research has found that the tendency of exemplary positive development is generative, towards the making of positive contributions to the self, others, and civil society. Demonstrating an integration similar to Einstein's, Lerner argues that "thriving young people – youth who make these mutually beneficial contributions to self and to society – are people whose senses of self involve a combined oral and civic commitment to contributing to society in manners reflective of their individual strengths, talents, and interests" (p. 5).

The unique balance encapsulated in this conceptualization of thriving is also reflected in those who do "Good Work," work that is at once personally fulfilling and meaningful, excellent by the standards of a domain, and socially responsible (Gardner et al. 2001). Gardner, Csikszentmihalyi, and Damon found that having a strong commitment to doing *good work* provides satisfaction when accomplishing goals and persistence when running into obstacles. In particular, moral values beyond one's self serve to clarify one's ideas and actions (Damon 1988). That is, it provides individuals with an important answer to *why* they do what they do and what the individual hopes to accomplish. The pursuit of good work as an ideal can help young people to choose goals that are both personally rewarding and socially meaningful, to pursue their dreams as a valued member of society without "selling out" to counterproductive forces and temptations.

More recently, Damon (2008) has argued that a strong sense of purpose, which Einstein considered to be (ideally) one's highest life problem, provides an individual with vital energy to persevere over the life span more so than any other factor. That is, it can provide young people with a "rudder" in an era of cultural drift. Implying the ability to both create and accomplish something meaningful on one's own *and* the desire to contribute to others in order to make a difference in the world, Damon and colleague's have found that a sense of *purpose* is closely connected to well-being. Psychologists pioneering Positive Psychology place the ability to forge a meaningful life prominent on the list of character strengths leading to authentic happiness (Seligman 2002; Peterson and Seligman 2004). Although pursuing purposeful tasks may require a great deal of sustained effort, it can also be deeply satisfying. Thus, artists, scientists, and other professionals are never happier than when in the process of solving a problem having benefits to others—which has been observed to be a powerful source of motivation and flow (Csikszentmihalyi 1996).

Einstein's solution to the tension between individualistic and social aims can therefore be summarized, even if an oversimplification, as the education of independently minded individuals towards collective ends. Since schools are public institutions, its aims must be directed towards the commonwealth as well as the individual. The relationship between the individual and society is necessarily

symbiotic; as Einstein asserted, "Without creative personalities able to think and judge independently, the upward development of society is as unthinkable as the development of the individual without the nourishing soil of the community" (Einstein 1954, p. 14). Einstein's formulation makes as an aim of education modern conceptualizations of *thriving*, doing *good work*, *purpose,* and *flow,* all cornerstones of Positive Youth Development and Positive Psychology. In other words, it promotes happiness and well-being as an aim of education (Noddings 2003).

The Inversion and Restoration of Einstein's Aim

Here's the problem. The real shortcoming of traditional education can be summarized as the tendency to produce the exact opposite result of Einstein's aim, or its actual *inversion*. Too often, mass education in its quest for standardization interferes with the nurturing of independently acting individuals and their unique potential. At the same time, the common goals of the community are increasingly neglected as the implicit goal of education is perceived to be singularly focused on the pursuit of individualistic ends: obtaining the degree and resume necessary for personal wealth, status, and recognition. Although our system of mass education is historically rooted, the recent policy emphasis on achievement through standardized testing was intended to address primarily the economic and military goals of the nation (The National Commission on Excellence in Education 1983). Aided by a culture that glorifies the wealthy and famous, and an individualistic emphasis on standard academic evaluation, students are less interested in the merits of cooperation and interdependency than the concern that classmates may negatively and "unfairly" impede their own performance (Kohn 1998).

Can students be blamed? Reflecting on the increasing lack of debate on the aims of education, Noddings (2003) comments, "It is as though our society has simply decided that the purpose of schooling is economic – to improve the financial condition of individuals and to advance the prosperity of the nation. Hence students should do well on standardized tests, get into good colleges, obtain well-paying jobs, and buy lots of things" (p. 4). However, these aims are worrisome in several respects. First, they are too narrow; surely, there is more to life than economics alone. However, even a bigger issue—and one with grave consequences for student engagement—is that when the aims of education parallel that of a capitalistic economy, such that the structure of schooling is fundamentally competitive, there are bound to be winners and *losers* (see Chap. 5 for a fuller discussion of this issue). When students are sorted into winners and losers, they are more likely to feel like pawns of the system rather than active agents and decision makers, and engagement suffocates from the lack of freedom to make one's own educational goals and meanings.

In their classic work, *Habits of the Heart*, Bellah and colleagues (1985) recognized that the essential problem with individual freedom is what that freedom is

used *for*, something that is difficult for Americans to even define, and which becomes ever more obscure with more and more freedom. They observed that, increasingly, freedom in American society is the freedom to be left alone and free of the expectations and obligations of others. It is the freedom to have one's own values, to be one's "own moral universe" (p. 76), and the freedom to put one's energies towards utilitarian goals while using free time for personal leisure and self-gratification. Unfortunately, freedom to be left alone often translates into actually *being alone* or alienated from all sense of community, as Robert Putnam (2000) also observed in his book, *Bowling Alone*.

Increasingly, there is no common experience considered essential or important, no shared societal concerns—and least of all as a part of students' schooling. Damon (2008) argued that as one observes youth today, that all-important sense of purpose is what is most missing: "The most pervasive problem of the day is the sense of emptiness that has ensnared many young people in long periods of drift during a time in their lives when they should be defining their aspirations and making progress toward their fulfillment" (p. xiv). As we observe rising rates of depression and apathy in increasingly "motivated but directionless" generations, it is argued that students would not lose their vital life force as readily if they had a better sense of what they wanted to accomplish and why (Schneider and Stevenson 1999). Damon (2008) found that only about 20 % of youth had a strong sense of purpose, and 25 % (referred to as the *disengaged*) had no or only a vague sense of purpose. Once again, however, youth cannot necessarily be blamed as long as purpose (as opposed to only achievement) remains a marginal concern for education. Schools especially fall short in offering youths insight into paths that they will find meaningful, instead offering only specialized knowledge. It is repeatedly observed that students have no idea why they are asked to learn a given history, math, or social studies lesson.

Traditionally, capital E "Engagement" was referred to as one's "calling" in life. Although this term is now dated, the concept has not lost its importance; it refers to a sense of moral elevation, gratitude, joy, and, in some cases, closeness to God felt by the awareness that one's unique talents may be matched to some special or societal purpose (Colby and Damon 1994). One of the most important functions of schooling, albeit one receiving the least attention, is putting young people in touch with their unique callings in life. If the development of small e "engagement" to capital E "Engagement" underlies this function, as I believe, this alone places engagement as a top priority educational outcome.

Educators and mentors are essential in facilitating this matching of individuals to callings since they play a role in the development of the unique abilities of their students, and also have a broader awareness of their social and professional uses (Nakamura and Shernoff 2009). In fact, one factor that seems to make the most difference in the development of a "purpose-driven life" (Colby and Damon 1994) is the presence of a meaningful adult who sees in a young person both his outstanding strengths and their "social equivalents," to use Dewey's terminology. Educators may have a particularly large role to play in aiding the 25 % of youth who are classified as completely disengaged or unpurposeful, those who don't know where to start.

The goal would not be to tell these youth what they should value and find important so much as to steer them in possible future directions based on their strengths and expressed interests.

Einstein's "Theory of Motivation"

A slightly more succinct statement of Einstein's proposed aim was stated this way: "The school should always have as its aim that the young man leave it as a harmonious personality, not as a specialist" (Einstein 1954, p. 64). Dewey also believed that the aim of education was a "certain quality of character" of the individual, defining "character" in very broad terms. For Dewey, an important aim of education was "an increase in the powers of the mind," including one's social, aesthetic, and ethical potentialities, "rather than an enlargement of its possessions" (Dewey 1974/2000, p. 5).

Like Dewey, Einstein believed that the business of schools was not merely the transmission of large amounts of knowledge, but rather the transferring of cultural and moral traditions from one generation to the next. This is especially true as modern economic life has increasingly weakened the role of the family as the bearer of those traditions. Cultural traditions are sustained and evolve as creative individuals interact with them and incorporate them as personal knowledge. Despite the tendency for schools to pour more and more information into students, Einstein did not refer to knowledge as important, except when translated into functional skill and action.

As quoted earlier, Einstein considered knowledge to be "dead." But how then, as he put it, can we "serve the living?" The key may reside in the (training of) "independently acting and thinking individuals." This "independently acting and thinking" aspect of a "harmonious personality" used to be called "the will," and thus the first part of Einstein's aim could be simplified to "the training of the will." The will is the creative force of the individual, and thus the creative will—and not the ability to sit and be mechanically taught—is the driver of learning. Without the will there can be no learning, and with it, possibilities for learning are nearly infinite.

Controlling—or alternatively, failing to control—the will is a central educational problem. We all have a large variety of personal impulses and urges—some social, some biological. Satisfying both our biological urges and societal expectations is a fundamental developmental task; the tension between these two forces places individuals in a bind which becomes a developmental problem to solve. As has been observed before, how satisfactorily we solve this problem has major implications for civilization (Freud 1930; Goethe 1808/1988) and the species (Csikszentmihalyi and Larson 1984). At present, however, youth tend to flounder in this area. The incredible rate of growth in the prevalence of children and adolescents classified as having ADHD (Bloom and Dey 2006) reflects, among other things, the inability of large proportions of children to control their urges, appetites, and distractions.

Increasingly, it's not so much motivation that's a problem, as much as *attention*. However, in the language of the will, the problem is that one's will becomes jerked around by a large variety of forces—some genetic, others societal—that compete very successfully for the attention of youth. Youth meanwhile fail at the task of *imposing their own will* from within, to have their own way, or what Csikszentmihalyi commonly refers to as controlling consciousness (Csikszentmihalyi and Larson 1984; Csikszentmihalyi 1990). Children who struggle to master their will are, deep down, grateful to adults for restricting TV or recreational options, or otherwise imposing structure to make their world smaller, as doing so facilitates a focusing of psychic energy difficult to achieve independently.

One of the most essential ways to help "train the will" is to provide it with choices and guided practice at making those choices. This includes choices in activities, choices in repairing relationship problems that arise, and, most critically, choices in how one should spend one's time. The observation that the average person has little insight into who he is and what he wants may never have been more true than for youth today (Schneider and Stevenson 1999).

Equipping the Will

Einstein recognized that fear and coercion are counterproductive for equipping the will, and understood what the important ingredients for equipping it actually are. Despite the fact that founding theorists of intrinsic motivation claim to be the first to classify qualitatively different *types* of motivation (as opposed to considering only the *quantity* of motivation, i.e., how much motivation someone has), Einstein, a proficient scientist himself, classified motivations into three main types back in 1936 along similar lines that they have been categorized since:

> Behind every achievement exists the motivation which is at the foundation of it.… The same work may owe its origin to fear and compulsion, ambitious desire for authority and distinction, or loving interest in the object and a desire for truth and understanding, and thus to that holy curiosity which every healthy child possesses, but which so often is weakened early. (Einstein 1954, p. 61)

Not only did Einstein recognize these different types of motivation, but his writings reflected the belief that *the quality of the achievement is determined by the quality of the motivation*.

The first type of motivation was one with which Einstein was certainly familiar as a result of his own early education in strict, regimented German schools, but he held it as the least productive motive:

> To me the worst thing seems to be for a school principally to work with methods of fear, force, and artificial authority. Such treatment destroys the sound sentiments, the sincerity, and the self-confidence of the pupil. It produces the submissive subject. (Einstein 1954, p. 61)

Although modern American schools are mostly free from fear of physical punishments that existed in Einstein's day, many students obviously suffer the consequences of this most destructive motive. Fear is inherently destructive because it drains the organism of the psychic energy better invested in the learning itself. Sometimes students manage to create their own fear and compulsions, though often it is produced through interaction with parents, peers, and teachers. Fear and anxiety of school failure are still very real and common symptoms of the "one best system" (see Chap. 5 for examples).

Einstein's remarks about the second motivation, ambition, are best characterized as ambivalent. He recognized that the desire for recognition and approval "lies firmly fixed in human nature" and "is one of the most important binding powers of society." However, he also cautioned that "the desire to be acknowledged as better, stronger, or more intelligent than a fellow being or fellow scholar easily leads to excessive egoistic psychological adjustment, which may become injurious for the individual and for the community" (Einstein 1954, p. 62). Here, Einstein recognized that the highly motivated but unprincipled person may be far more destructive than an unmotivated one.

In educational settings, the consequences of excessive ambition are reflected in the majority of high school students who admit to cheating over an academic year (Yazzie-Mintz 2007). In institutions of higher education especially, there are widely reported occurrences of theft and destruction of others' intellectual property, and consequently, careful taking measures to protect one's ideas or work. In elite academic circles, the need for greater and greater recognition in one's field has been likened to a sickness (Nakamura and Shernoff 2009). Of course, ambition based on the sort of Social Darwinism where "might makes right" is a completely natural and adaptive response to a competitive environment. Because this poses a risk of creating an amoral free-for-all, however, Gardner et al. (2001) recognized the moral imperative for our future leaders to be not only the best and brightest, but also ethically responsible. Guiding the younger generation to do "good work," that is both excellent and ethical is therefore one of the more important functions that parents, teachers, and mentors can serve (Nakamura and Shernoff 2009).

Einstein argued that the cooperative tendencies of humankind were more essential in its struggle for existence than competitive ones, and he urged educators to guard against the extolling of "success" (in the common sense of the world) as the default aim in life:

> For a successful man is he who receives a great deal from his fellow men, usually incomparably more than corresponds to his service to them. The value of a man, however, should be seen in what he gives and not in what he is able to receive. (Einstein 1954, p. 62).

"The most important motive for work in the school and in life," according to Einstein,

> is the pleasure in work, pleasure in its result, and the knowledge of the value of the result to the community. In the awakening and strengthening of these psychological forces in the young man, I see the most important task given by the school. Such a psychological

> foundation alone leads to a joyous desire for the highest possessions of men, knowledge and artistic-like workmanship. The awakening of these productive psychological powers is certainly less easy than the practice of force or the awakening of individual ambition but is the more valuable for it. The point is to develop the childlike inclination for play…. (Einstein 1954, p. 62).

Einstein consistently held this inclination towards sheer pleasure, marvel, or "holy curiosity," as the foundation of all significant science art, culture, and even religion:

> The most beautiful experience we can have is the mysterious. It is the fundamental emotion which stands at the cradle of true art and true science. Whoever does not know it and can no longer wonder, no longer marvel, is as good as dead, and his eyes are dimmed. It was the experience of mystery – even if mixed with fear – that engendered religion. A knowledge of the existence of something we cannot penetrate, our perceptions of the profoundest reasons and the most radiant beauty, which only in their most primitive forms are accessible to our minds – it is this knowledge and this emotion that constitute true religiosity; in this sense, and in this alone, I am a deeply religious man (Einstein 1954, p. 11).

Einstein maintained that the "strongest and noblest motive" for scientific research in particular, including his own, was what he referred to as "the cosmic religious feeling," very similar in nature to those of religious leaders (Einstein 1954, pp. 38–40). Einstein attempted to elucidate:

> (The scientist's) religious feeling takes the form of a rapturous amazement at the harmony of natural law, which reveals an intelligence of such superiority that, compared with it, all the systematic thinking and acting of human beings is an utterly insignificant reflection. This feeling is the guiding principle of his life and work, in so far as he succeeds in keeping himself from the shackles of selfish desire. It is beyond question closely akin to that which has possessed the religious geniuses of all ages. (Einstein 1954, p. 40).

As much as many educators may agree that the passion to wonder and marvel, or the development of that "holy curiosity," to use Einstein's words, is among the highest educational ideals, where are the seminars, workshops, courses, and books for teachers and administrators on how to awaken this passion in individual students? Although there have been a number of theories and principles of motivation studied extensively by scholars and researchers over the past 50 years, what is most lacking are the models that show educators how students can be motivated and engaged in actual practice. Several empirically based models that educators can consider are the focus of Chaps. 10–14 of this book.

The most important educative influence on youth, more powerful than formal schooling, thought Einstein, may be thought of as the school of life—including one's relationships and interactions with parents, friends, and other associates. At least this was certainly the case in Einstein's own life. With most of Einstein's formal schooling more than disappointing, it was his meaningful relationships with meaningful others that provided the enriching context for his intellectual development leading directly to his theories. These relationships included that with his father, whose gift of a magnetic compass fired Albert's imagination about the physical world; his uncle, who modeled for him the fun and wonder of mathematics;

a medical student, who brought him a set of books on nature that ignited his interest and wonder in the natural universe as a boy; a gymnasium teacher, who awakened Einstein's love of literature, especially the work of Goethe; and a mathematics teacher, who provided him with an affidavit certifying that he was equipped to do college work after he had dropped out of high school (i.e., gymnasium), in contrast to the several who told him he would never amount to anything (McMillin n.d.).

As a good deal of recent research illustrates, engagement and motivation frequently blossom in the context of a relationship between a particular student and teacher, each with their own unique strengths, limitations, emotions, idiosyncrasies, and personalities. This is the focus of Chap. 7. Einstein believed the teachings embedded in such relationships preserve our culture:

> It is not enough to teach a man [sic] a specialty. Through it he may become a kind of useful machine but not a harmoniously developed personality. It is essential that the student acquire an understanding of and a lively feeling for values. He must acquire a vivid sense of the beautiful and the morally good…. These precious things are conveyed to the younger generation through personal contact with those who teach, not—or at least not in the main—through textbooks. It is this that primarily constitutes and preserves our culture (Einstein 1954, p. 66–67).

As Csikszentmihalyi (1996) found in his study of creative adults, the type of work that moves forward any given field is usually based on a profound love and enjoyment in one's work. Einstein observed that work of this type is often but wrongly attributed to work ethic and discipline. Einstein believed that it is rather derived from the state of mind like the lover or worshipper—that it comes, "straight from the heart" (Einstein 1954, p. 227). Although one of Einstein's phrases has now been popularized to the point of cliché, it is still worth recognizing that he held imagination to be more important than knowledge. For Einstein, imagination was the driver of personality (indeed, it is what differentiates it from mere intellect); the creator of dreams, callings, and one's envisaged purpose (what Harvard Psychologist Robert Coles 1989, referred to as the "moral imagination"); and a prerequisite to human progress.

What educational approach does Einstein's philosophy imply more specifically? When commenting on what teaching methods are the best, Einstein stated that particular techniques are "of secondary importance." (Einstein 1954, p. 62). What was important was that schools *demand* of teachers "to be a kind of artist in his province," giving them the freedom to choose methods and select materials needed to meet this expectation (Einstein 1954, p. 63). He also opposed the idea that schools need to directly provide specialized knowledge for later accomplishments. Both he and Dewey emphasized that specialized training has the serious shortcoming that future conditions change, which can render specific techniques and specialized knowledge obsolete. In fact, the only certainty with respect to the future is that change is inevitable. Finally, in keeping with Dewey's emphasis on "learning by doing," Einstein advocated teaching methods that urge students to actual performance as opposed to passive appreciation or onlooking.

Constructivist Principles of Learning (and the Lack of Implementation)

As we have observed, Dewey wrote much to advance the argument that a liberal democracy should generate aims of education based on the needs of individuals. It was mainly due to this belief that Dewey (1974/2000) suggested that educators needed to be well versed in the science of the mind and human development, and although he experimented with this ideal at the Lab School he founded at the University of Chicago, he also admitted one problem: Early in the twentieth century, there were few established psychological principles of which to speak. Nearly a century later, we have learned a great deal about human cognition, behavior, motivation, and how humans learn best through a large stockpile of empirical research and related theory. In 1993, The American Psychological Association created a task force to synthesize this significant body of research and theory into tangible principles for educators, resulting in the *APA Learner-Centered Principles* (American Psychological Association 1997; see http://www.apa.org/ed/lcp2/lcp14.html).

As explored in Chap. 3, we know a lot about motivation in particular. A long history of research on *intrinsic motivation*, or being motivated to perform a task for its own sake, has largely supported Einstein's view that "pleasure in the work" carries many advantages in terms of learning, creativity, conceptual understanding, and continuing motivation; or you could say that his motivations of fear and ambition carry many disadvantages in these regards. There is now decades of research on what undermines and promotes intrinsic motivation. Deci and Ryan's (1980) theory of *self-determination* highlights what every good teacher and parent eventually learns: The autonomy of the learner is absolutely key to motivation. Any sort of compulsion is—psychologically speaking—close to a physical forcing in terms of its negative effects on intrinsic motivation or self-motivation (Deci 1996).

Especially compared to Dewey's day, it seems as though we have more theories, more research, more knowledge, more experience, more modalities, more materials, and much more technology to motivate students than ever before. So: *why aren't our schools working any better to engage youth*?

There is in fact a great agreement about key principles and conditions under which humans learn best. Much of contemporary theory in educational psychology view humans as active constructors of their cognitive worlds, and stress the importance of teaching them in a manner consistent with this image (e.g., Brown and Campione 1994; Brown et al. 1989; Paavola et al. 2004; Palincsar and Herrenkohl 1999; Rogoff 1990, 1995, 2003; Scardamalia 1989; Zhang et al. 2009; see Stone 1996 for one example of an alternative opinion). There is also much agreement that schools have serious problems in doing so. The wide ocean of difference is thus between how we know humans learn and how students are still asked to learn every day in schools. Despite this recognition and the better efforts of decades of reformers, schools *as a system* of education seem utterly immune to change. In fact, research suggests that there has been little or no increase in cooperative learning, active learning, and teacher–student interactions between 1983 and 1997, despite a

great deal of research in educational psychology from 1960 to 1880 suggesting that the quality of instruction would be greatly enhanced by these effective but underutilized practices (Koljatic and Kuh 2001). Why should it be that the significant knowledge produced about human learning has little or no effect on educational practice?

Coming to Grips with the Research–Practice Divide

Dewey wrote about one important reason extensively. Seemingly no less true today than in his time, he argued that schools are so set apart and isolated from the ordinary conditions and motives in life that the lessons students come to learn offer only an "abstract and remote reference to some possible living to be done in the future" (Dewey 1900/1990, p. 18). According to Dewey, all waste in education is due to this type of organizational isolation (p. 64).

The second reason that our increase in knowledge has not appreciably changed practice is that the knowledge is *difficult to implement*—especially in large classroom settings. Most teachers, and especially the good ones, value the learning of each individual in their class and individualized approaches in line with the philosophies of Einstein, Dewey, and the APA Learner-Centered principles. What student, or teacher for that matter, wouldn't prefer individualized tutoring as a more ideal learning environment than the large class setting? In a tutoring environment, these principles that rely on an individualized approach come naturally. However, as soon as one, two, three, five, or eight more students are added to the mix, individualizing instruction becomes inconceivably harder—let alone *twenty-five* more. Thus, even the teachers who most *value* these principles struggle to *implement* them.

Based on extensive observations of elementary school classrooms in his classic work *Life in Schools,* Jackson (1968) argued that learning is more in the periphery than the focus of a typical school teacher's vision when interacting with students in a typical classroom. Intellectually, learning may presumably be the goal, but in reality this goal becomes blurred. This imprecision of goals may become understandable when considering the number of classes in the curriculum and the number of students in each class—specifically, 25–30 students for roughly 1,000 h per year.

In another classic work, Sizer's (1984) *Horace's Compromise*, sheer numbers were also the paramount consideration when characterizing the work of teachers. Sizer believed that the overwhelming demands placed on teachers in terms of the number of students and classes inevitably make even sincere teachers compromise their ideals in terms of how much individualized attention they can provide each student (e.g., how much time can be spent on reviewing each student's paper). Sizer's fictitious but representative teacher, Horace, found himself continually compromising his well-intended ambitions to visit other classes within his department, set up meetings with students' parents, read within his field, and other like professional development activities. For teachers as well as students, the name of the game during a busy semester is usually *survival*. Often one of the best survival strategies

a teacher has is to keep students as busy as possible—a strategy that makes the primary goal *managing* rather than learning or motivating.

To demonstrate the diffusion of a teacher's goals and attention around instruction, Jackson uses the analogy of a mother's concern for the nutrition of her children when making dinner for a large family. The mother understands intellectually that the biological purpose of eating is nutrition, which has a strong relation to a child's health. She also understands that her children may have different dietary needs and desires. But the nature of the task requires that she puts on a single meal to be shared by the entire family, in which a variety of other variables become salient: for example, cost, convenience, aesthetic quality, and taste. Her own taste may be the greatest influence on judgments of taste or preference. Given time constraints, the first priority inevitably becomes doing everything that she needs to do *in the time that she has*: preparing enough food, but not too much, and preparing enough items of sufficient variety to increase the odds that every child can eat *something*. The meal itself is a social activity as much as a nutritive activity. After the necessary clean up, only in exhaustion *might* she get to a reflective place with enough leftover attention to consider the nutrition of each child, *perhaps* informing her next meal. Thus, in actual practice, attention to what individuals are learning is constantly tempered by, if not abandoned for, primary allegiance to the necessities of the whole class within the institutional constraints of the school.

Due to the increasing recognition that quality education is individualized, *differentiated instruction* (Tomlinson 1995, 1999) has become extremely popular among teachers in recent years. In differentiated instruction, teachers understand that their students learn differently. They use different modalities to appeal to the diverse interests of individual students, using varying rates and complexity of instruction to accommodate varying degrees of intellectual readiness. Students may compete against themselves rather than other students. Each student is provided with an individualized roadmap for deep learning. Because students are not fit to a standard mold, it is necessary for teachers to become astute observers and diagnosticians of each student. Teachers become the artists that Einstein envisioned, using whatever techniques are necessary to recognize and reach their students as individuals (Tomlinson 1999).

Not surprisingly, however, differentiated instruction is difficult to achieve. The more differentiated and interactive a classroom is, the more complex it becomes. If each student has a distinct learning profile, then ongoing assessment of each student is also needed. There must also be provisions to offer each student meaningful choices, make academic work meaningful for each student, and to plan for the unique learning styles and optimal levels of challenge for each students' level of ability—all very much as the APA Learner-Centered principles would have us do. Needless to say, changing the methodology for every child on a continual basis is a highly challenging skill, requiring a high level of interaction between teacher and students. Thus, it is an understatement to say the best methods are often the most challenging ones. They are impossibly challenging without specialized training for most teachers, and even if properly trained, many teachers might soon burn out from the level of effort involved. However, there are also reasons for believing that the

problem of satisfying the learning needs of individuals in large numbers is not impossible to solve. Key principles for reaching this challenge are provided in Chaps. 6–9 of the book, and the models illustrating how these principles can be effectively implemented are provided in Chaps. 10–14.

Tyack reminds us that the entrenched division between researchers and teachers on the one hand, and practicing teachers on the other, was historically an inherent part of the "one best system." Both John Dewey and his replacement at the Chicago Lab School, Charles Judd, proposed science as a new method of improving education. Thorndike also believed that scientists or "experts" should discover the best methods to teach, and teachers should implement them. From the beginning of this system to the present day, however, teachers have generally been unaware of the work of scientific researchers. Even if they were interested in it, taking the time needed to absorb it would merely be one more item on Horace's neglected professional development list. The same large gulf between teachers and researchers is evident in the present day, perhaps becoming even wider. Despite scientific advances, the process has little effect on standard teaching practice (Stigler and Hiebert 1999).

Reeve (2009) took a specific scientifically recommended practice—to support the autonomy of students—and provided several reasons that the recommendation has been so inconsistently implemented in the practice of teaching. These included the power differential between teachers and students, the need for teachers to control or manage students, and teachers' lack of comfort with losing control. As valid as these barriers may be, another important and seldom considered source of separation relates to the professional relationship between researchers and educational practitioners: Specifically, *teachers and researchers are generally not essential stakeholders in each others' work*. A more productive relationship between researchers and practitioners must be forged to include shared goals and optimal information exchange in order to be mutually beneficial. Ideally, research and practice would create an authentic partnership in pursuit of community-level goals.

Axioms from the Perspective of Social Psychology, Sociology, and Evolution

With historical and philosophical axioms have already been introduced, some social–psychological and sociological axioms now also emerge. A social–psychological axiom relates chiefly to the primacy of interpersonal relationships as a context for fostering youth engagement. While this may seem like an obvious principle, classic theories of motivation have sprung mainly from the discipline of psychology, in which motivation is conceptualized as an individual psychological drive rather than a shared interpersonal process. Only within the last ten years or so has research on the influence of interpersonal relationships (as distinct from "relatedness" conceptualized as one component of an individual's psychology) been seriously considered as an important influence on engagement with learning—but

within that time, research findings have consistently suggested the importance of supportive interpersonal relationships as context for engagement. This is the topic of Chap. 7, and is further illustrated in several of the empirically based models presented in Chaps. 10–14.

The sociological axiom relates to the fact that schools are only one component in the overall structure of modern society. A major problem of engagement in schools is a direct function of a societal organization that sorts individuals into economic winners and losers. Our schools reflect this organization, and, indeed, formal schooling marks the beginning of this sorting function for most people. Chief mechanisms include grading, tracking, and admissions systems, which have proven to provide disproportionate advantages to the well-to-do, resulting in a significant and persistent achievement gap (Carbonaro 2005; Carbonaro and Gamoran 2002; Gamoran and Mare 1989; Hallinan 1996; Oakes 1985, 2000; Oakes et al. 1992). The present educational system is designed such that significant percentages of students land on the bottom of a bell-shaped distribution of unidimensional measures of "achievement," for example, performance on standardized math and English exams. When students are sorted into winners and losers on a mass scale, the psychological, motivational, and economic effects on the losers can be profound, and there are also a number of adverse motivational effects on the so-called winners. This topic is significantly expanded in Chap. 5.

One need not contemplate the function of school in society for long before coming to an even broader consideration, amounting to one of the core philosophical questions humans face—that of what *should* be the purpose of society, or even the purpose of life. While obviously a question beyond the scope of this book, it is still worth suggesting that purely economic, capitalistic, and imperialistic goals represent a purpose far too narrow for a huge number of people. When searching for the larger purpose of humankind in general, a principle is needed that encapsulates the development of the entire species. Such is a process of human evolution. Humans have evolved and will continue to evolve in one direction or another, the direction of that evolution thereby becomes among the most fundamental and significant of collective human activities, whether consciously aware of this activity as a larger purpose or not. A culminating phase of human evolution at present is the development of the complex human personality (Novak 2009), not far from Einstein's conceptions of "harmonious personality," "soul," or "will," as opposed to mere intellect.

Some experiences nourish personality or "equip the will" more than others. As one example, championed by my earlier mentioned high school English teacher, McMillin, the study of classic novels and their protagonists helped certain individuals to transcend a less rich environment, transporting them into an enlarged world of human capabilities and possibilities. Once inhabiting that world, these individuals could decide for themselves how much they wanted to live like Odysseus, Faust, or Huckleberry Finn. The values or morals absorbed from such an experience were only the latest occurrence of a process of cultural evolution, as they had been handed down from one generation to the next before this. These *memes*, or building blocks of cultural evolution, make up an inherited culture. Thus, education has a pivotal

role in the direction that the prevailing *culture* evolves (Nakamura and Shernoff 2009; Martin 2011). For both biological and cultural evolution, therefore, the most important investment a society can make is in the *individual humanity*[1] of its citizens, to borrow the phrase after which McMillin named his course, reflecting his life's work.

Humans evolve as our consciousness evolves, bringing us ever closer to a fuller perception and understanding of reality or the universe or divinity. There is no reason to believe that our present level of consciousness is any more than very partially evolved compared to a later stage in evolution. I would use the following analogy. We can imagine that the various animals have different levels of consciousness, especially as their anatomy limits their perception of reality. For example, the consciousness of a relatively intelligent animal like a chimpanzee may be mostly similar to that of humans, but it lacks several bio-evolutionary capacities (e.g., metacognition, moral reflection, or advanced problem solving) that humans have developed, as well cultural knowledge such as an awareness of history and the physical universe. The consciousness of an ant or a bee may be much more limited by virtue of even less developed bio-cognitive capacities and cultural capital, and the consciousness of a microbe or other less complex life forms may be more limited still. Unless we believe that human kind in its present form is the endpoint of all evolution, which would appear to be an extraordinarily vain belief, there is a much fuller perception and understanding of reality that is not yet known to us. Both bio-evolutionary and cultural evolutionary advances would appear to be activities of great import to the human species. Even if only vaguely understood, an investment in the individual humanity of our citizenry through educative experiences will build on both processes. Engaging youth is the high octane fuel of inevitable educative processes that nurtures individual humanity in support of human evolution. What weighs in the balance is not only the speed of human evolution but also, more importantly, its direction.

Conclusion

Student engagement, like all educational issues, must be considered with reference to the aims of education. Schools are in a unique position to facilitate students' engagement to learn. Einstein's formulation of training individuals to exercise powers of independent action and thinking in service of the community is both positive and generative. Consistent with conceptions of Positive Youth Development (e.g., Lerner 2004), it supports a vision of youth engagement as one of making positive contributions to the self, others, and civil society. It also may be helpful as educators attempt to fill a void in terms of a larger sense of purpose experienced by many youth (Damon 2008). It can also help to ameliorate the growing sense that

[1] "Individual Humanity" borrows the phrase after which my revered high school teacher, Laurence McMillin, named his course that embodied his life's work.

individual achievement is the ultimate goal not only in school but also in life. Rather, educators may come to understand one of their most important functions as identifying and supporting youths' future directions and sense of mission based on their strengths, interests, and values.

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References

American Psychological Association. (1997). *Learner-centered psychological principles: A framework for school redesign and reform.* http://www.cdl.org/resource-library/articles/learner_centered.php. Accessed 13 Oct 2010.

Bellah, R. N., Madsen, R., Sullivan, W. M., Swindler, A., & Tipton, S. M. (1985). *Habits of the heart: Individualism and commitment in American life*. Berkeley: University of California Press.

Bloom, B., & Dey, A. N. (2006). Summary health statistics for U.S. children: National Health Interview Survey, 20004. *Vital Health Statistics, 227*, 1–85.

Brown, A. L., & Campione, J. C. (1994). Guided discovery in a community of learners. In K. McGilly (Ed.), *Classroom lessons: Integrating cognitive theory and classroom practice*. Cambridge, MA: MIT Press/Bradford Books.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42.

Carbonaro, W. J. (2005). Tracking, students' effort, and academic achievement. *Sociology of Education, 78*(1), 27–49.

Carbonaro, W. J., & Gamoran, A. (2002). The production of achievement inequality in high school English. *American Educational Research Journal, 39*(4), 801–827.

Colby, A., & Damon, W. (1994). *Some do care: Contemporary lives of moral commitment*. New York: The Free Press.

Coles, R. (1989). *The call of stories: Teaching and the moral imagination*. Boston: Houghton Mifflin.

Cordova, D. I., & Lepper, M. R. (1996). Intrinsic motivation and the process of learning: Beneficial effects of contextualization, personalization, and choice. *Journal of Educational Psychology, 88*(4), 715–730.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Perennial.

Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. New York: HarperCollins.

Csikszentmihalyi, M., & Larson, R. (1984). *Being adolescent: Conflict and growth in the teenage years*. New York: Basic Books.

Damon, W. (1988). *The moral child: Nuturing children's natural moral growth*. New York: Free Press.

Damon, W. (2008). *The path to purpose: How young people find their calling in life*. New York: Free Press.

Deci, E. L. (1996). *Why we do what we do*. New York: Penguin.

Deci, E. L., & Ryan, R. M. (1980). Self-determination theory: When mind mediates behavior. *Journal of Mind & Behavior, 1*, 33–43.

Dewey, J. (1897/1973). My pedagogic creed. In J. J. McDermott (Ed.), *The philosophy of John Dewey* (pp. 442–454). Chicago: University of Chicago Press.
Dewey, J. (1900/1990). *The school and society* (2nd ed.). Chicago: University of Chicago Press.
Dewey, J. (1916/1944). *Democracy and education: An introduction to the philosophy of education* (1st Free Press paperback ed.). New York: Collier-Macmillan.
Dewey, J. (1937/1946). *Problems of men*. New York: Philosophical Library.
Dewey, J. (1966). *Democracy and education: An introduction to the philosophy of education* (1st Free Press paperback ed.). New York: Collier-Macmillan.
Dewey, J. (1974/2000). What psychology can do for the teacher. In R. Diessner & S. Simmons (Eds.), *Sources: Notable selections in educational psychology*. Guilford: Dushkin/ McGraw-Hill.
Einstein, A. (1945, November). Atomic war or peace. *Atlantic Monthly.*
Einstein, A. (1954). *Ideas and opinions* (Modern Library ed.). New York: Modern Library.
Einstein, A. (Ed.). (1960). *Einstein on peace*. New York: Schocken Books.
Freud, S. (1930). *Civilization and its discontents*. Oxford, UK: Hogarth.
Gamoran, A., & Mare, R. D. (1989). Secondary school tracking and educational inequality: Compensation, reinforcement, or neutrality? *American Journal of Sociology, 94*(5), 1146–1183.
Gardner, H. (1993). *Multiple intelligences: The theory in practice*. New York: Basic Books.
Gardner, H. (2006). *Multiple intelligences: New horizons in theory and practice*. New York: Basic Books.
Gardner, H., Csikszentmihalyi, M., & Damon, W. (2001). *Good work: When excellence and ethics meet*. New York: Basic Books.
Goethe, J. W. v. (1808/1988). *Faust (part I)*. New York: Bantam Books.
Hallinan, M. T. (1996). Race effects on students' track mobility in high school. *Social Psychology of Education, 1*, 1–24.
Jackson, P. W. (1968). *Life in classrooms*. New York: Holt, Rinehart & Winston.
Kaestle, C. (1985). Education reform and the swinging pendulum. *Phi Delta Kappan, 66*(6), 422–423.
Kohn, A. (1998). *What to look for in a classroom: And other essays* (1st ed.). San Francisco: Jossey-Bass.
Koljatic, M., & Kuh, G. D. (2001). A longitudinal assessment of college student engagement in good practices in undergraduate education. *Higher Education, 42*(3), 351–371.
Lerner, R. M. (2004). *Liberty: Thriving and civic engagement among America's youth*. Thousand Oaks: Sage.
Martin, J. R. (2011). *Education reconfigured: Culture, encounter, and change*. New York: Routledge.
McMillin, L. (n.d.). *Einstein's theory of education – learning as a creative activity*.
Montessori, M. (1964). *The Montessori method*. New York: Schocken Books.
Nakamura, J., & Shernoff, D. J. (2009). *Good mentoring: Fostering excellent practice in higher education*. San Francisco: Jossey-Bass.
Noddings, N. (2003). *Happiness and education*. Cambridge, UK: Cambridge University Press.
Novak, B. (2009, April). *Holism, evolution, and education: Educational implications of the moral and personal nature of human evolution.* Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
Oakes, J. (1985). *Keeping track: How schools structure inequality*. New Haven: Yale University Press.
Oakes, J. (2000). Grouping and tracking. In A. E. Kazdin (Ed.), *Encyclopedia of psychology* (Vol. 4, pp. 16–20). New York: Oxford University Press.
Oakes, J., Gamoran, A., & Page, R. N. (1992). Curriculum differentiation: Opportunities, consequences, and meaning. In P. W. Jackson (Ed.), *Handbook of research and curriculum* (pp. 570–608). New York: McMillan.
Paavola, S., Lipponen, L., & Hakkarainen, K. (2004). Models of innovative knowledge communities and three metaphors of learning. *Review of Educational Research, 74*(4), 557–576.

Palincsar, A. S., & Herrenkohl, L. R. (1999). Designing collaborative learning contexts. *Theory into Practice, 41*(1), 26–32.
Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification.* Washington, DC: American Psychological Association.
Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.
Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist, 44*(3), 159–175.
Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in a social context*. New York: Oxford University Press.
Rogoff, B. (1995). Development through participation in sociocultural activity. *New Directions for Child Development, 67*, 45–65.
Rogoff, B. (2003). *The cultural nature of human development*. Oxford: Oxford University Press.
Rousseau, J. J. (1762/1979). *Emile: Or, on education*. New York: Basic Books.
Ryan, R. M., & Powelson, C. (1991). Autonomy and relatedness as fundamental to motivation and education. *The Journal of Experimental Education, 60*(1), 49–66.
Scardamalia, M. (1989). Computer-supported intentional learning environments. *Journal of Educational Computing Research, 5*(1), 51–68.
Schneider, B. L., & Stevenson, D. (1999). *The ambitious generation: America's teenagers, motivated but directionless*. New Haven: Yale University Press.
Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.
Shernoff, D. J. (2001/2012). *The individual-maker: A master teacher and his transformational curriculum*. Palm Desert: William & Sons.
Sizer, T. R. (1984). *Horace's compromise: The dilemma of the American high school*. Boston: Houghton Mifflin.
Steffe, L. P., & Gale, J. E. (1995). *Constructivism in education*. Hillsdale: Lawrence Erlbaum.
Stigler, J. W., & Hiebert, J. (1999). *The teaching gap: Best ideas from the world's teachers for improving education in the classroom*. New York: Free Press.
Stone, J. E. (1996). Developmentalism: An obscure but pervasive restriction on educational improvement. *Education Policy Analysis Archives, 4*(8), 1–29.
The National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Washington, DC: U.S. Department of Education.
Tomlinson, C. A. (1995). *How to differentiate instruction in mixed-ability classrooms* (p. 90). Alexandria: Association for Supervision and Curriculum Development.
Tomlinson, C. A. (1999). *The differentiated classroom. Responding to the needs of all learners* (p. 145). Alexandria: Association for Supervision and Curriculum Development.
Tomlinson, C. A., & Germundson, A. (2007). Teaching as jazz. *Educational Leadership, 64*(8), 27–31.
Yazzie-Mintz, E. (2007). *Voices of students on engagement: A report on the 2006 High School Survey of Student Engagement* (p. 12). Bloomington: Center for Evaluation & Education Policy.
Zhang, J., Scardamalia, M., Reeve, R., & Messina, R. (2009). Designs for collective cognitive responsibility in knowledge-building communities. *Journal of the Learning Sciences, 18*(1), 7–44.

Chapter 3
The Nature of Engagement in Schools

Introduction

Engagement is a complex construct, encompassing both observable (e.g., attending class) and unobservable psychological events (i.e., "investment"), a persistent *quality of interaction*, *and* positive emotions (e.g., enjoyment). In their review of the literature, Fredricks et al. (2004) observed a multitude of conceptualizations and measurements of engagement. In this chapter, several of those conceptualizations are reviewed and evaluated. The relationship between engagement and motivation is also discussed, and engagement in schools is viewed through the lens of several dominant theories of motivation. A conceptualization of engagement rooted in Csikszentmihalyi's conception of flow is adopted consisting of simultaneous, heightened concentration, interest, and enjoyment. The importance of these perceptions in engagement for learning is discussed. A key attribute of this conceptualization is the combination of both work-like and play-like engagement.

There is fairly broad agreement that student engagement involves both behaviors and emotions (Connell and Wellborn 1991; Johnson et al. 2001; Newmann 1992; Skinner and Belmont 1993; Smerdon 1999; Turner et al. 1998). Classically, students were considered to be (positively) engaged when they "devote substantial time and effort to a task, when they care about the quality of their work, and when they commit themselves because the work seems to have significance beyond its personal instrumental value" (Newmann 1986, p. 242). However, one problem with this classic conceptualization of student engagement is that engagement is defined mainly in terms of what adults would like students to do to be good students in traditional schools. It thereby places responsibility for high engagement on the student rather than on the school system despite *widespread disengagement.*

Disengagement is conveniently defined in terms of a variety of behaviors that students *should be* doing in school, but are not. This includes failing to pay attention, complete homework assignments, and attend classes regularly. Of course, this is also true for the ultimate sign of disengagement, according to Finn's (1989) identification-participation model: failing to participate in schooling altogether.

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However, prevailing conceptualizations of student *engagement* (as opposed to disengagement) based exclusively on desired schooling behaviors have proven to be somewhat problematic, because the *psychological* investment or commitment to learn or master school material is not always an observable characteristic. Alternatively, when a behavior is observed that *appears* to represent engagement, it may actually represent passive compliance to authority figures rather than an authentic investment in mastering or comprehending knowledge. Nystrand and Gamoran (1991) found that students' *observed* engagement very often represented only *procedural engagement* (i.e., obediently following instructions and going through the motions of schooling) as opposed to *substantive engagement* (i.e., sustained mental involvement with academic work).

Newmann et al. (1992) therefore defined student engagement as the "psychological investment in and effort directed toward learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote" (p. 12). While this definition of a more substantive engagement overcomes the limitations of a strictly behavioral definition, it is defined primarily in relation to one's commitment or involvement in academic work (including knowledge, skills, and crafts), or at least those that *academic work was intended to promote*. This disclaimer is interesting; it seems to be communicating that academic work or academic settings do not always succeed in promoting the knowledge, skills, and crafts that they intend to foster. It is almost as though researchers persist in defining engagement as psychological investment in learning and skill building *even if* the educational environment is not conducive to such an investment.

Unfortunately, expecting students to adopt an ideal disposition towards learning in an environment that does not nurture such a disposition puts an unrealistic expectation on students to make a superhuman adaptation to their environment. Moreover, it is somewhere between ironic and unfair to regard routine adaptation to a frequently ineffective learning environment as a sign of maladjustment. In fact, the variety of ways that students adapt to the traditional school environment may be a sign of healthy adjustment under the circumstances. Well-known examples include what sociologists have called "social creativity," as when students who are not successful in academics take a creative approach to social identity that does not include being academically successful, sometimes resulting in the formation of school subcultures (e.g., Willis 1981).

Furrer and Skinner's (2003) definition of engagement is helpful because it is not narrowly based on the school or academic environment as the mandatory point of student departure: "Engagement refers to active, goal-directed, flexible, constructive, persistent, focused interactions with the social and physical environments" (p. 149). This definition rightly conceptualizes engagement as an *interaction* with an environment. We might even include *reciprocal* and *transactional* as important in the list of adjectives describing the nature of that interaction. Only then do we have a definition compatible with Lerner and colleague's ecological systems perspective (Gestsdottir et al. 2011; Taylor et al. 2002; Theokas et al. 2005; Urban et al. 2009) and Dewey's (1916/1944, 1934) philosophical one, contending that ecological systems function optimally when both the organism and the context interact in reciprocal, transactional, and mutually beneficial ways that leave each other better off than before.

"Persistent" is also an important adjective to describe engagement, especially "capital E" Engagement (see Chap. 1), since even peak engagement in at a single event or situation may have limited value if it does not carry into the longer-term future. Generally speaking, skill sets or accomplishments that amount to something valuable are developed over a period of time, comprised of numerous encounters utilizing that skill set. One need only think of learning a new language or musical instrument to test the supposition that persistent engagement is the key to accomplishment. "Use it or lose it," so the saying appropriately goes, in the case of acquiring a language.

What sorts of activities do people generally demonstrate persistence? Developing long-term goals is of course important, but *having* those goals is no guarantee of reaching them, especially if the activity itself is distasteful. Therefore, perhaps the best answer to this question is activities that one likes or loves. Thus, highly engaged learners are just as identifiable as disengaged ones in terms of associated behavioral patterns, and yet their most distinguishing qualities are *internal*, both emotional and cognitive in nature. Such students are interested, involved, curious, and, most especially, imaginative—and usually they have a positive self-concept with respect to their domain of interest (Ames and Ames 1984; Pintrich 2003; Skinner and Belmont 1993; Stipek 2002). It is thus important to include *positive* emotions (e.g., enjoyment) and cognitions (e.g., concentration), as well as qualities that entail elements of both (e.g., interest, imagination) as central to any definition of engagement. When one thinks about it, the quality of the cognitive and emotional involvement, including enjoyment, interest, and focus, is central to the healthy long-term engagement in almost any context, whether a healthy marriage, professional life, or vocational activity. It is the *quality* of the interaction or involvement that most matters, as signified by internal manifestations as much as external behavioral ones, the outcome of which is self-expression, the growth of continued involvement, and often an emerging aspect of identity.

This sustained engagement is the powerful life force or energy, limited only by the resources of the human body providing the parameters of consciousness, upon which human creativity, achievement, and progress rest. Einstein (1954) stated that motivation of this kind "stands at the cradle of all true art and true science" (p. 11). The role of positive emotions in such a force is often given short shrift; however, they are quite directly associated with superior attention and effort, as well as flexible thinking, the making of connections, powers of metacognition, and self-regulation (Linnenbrink 2007; Pekrun et al. 2002). As noted in Chap. 1, they also broaden thought-action repertoires (Fredrickson 2001, 2006). Thus, the emotional element is a significant sign of the *mutually* beneficial nature of the interaction between the person and object of engagement.

Engagement as a Complex Meta-construct

Fredricks et al. (2004) concluded that school engagement is a multidimensional meta-construct made up of distinct but integrated dimensions: cognitive, behavioral, and emotional. *Behavioral engagement* is based on observational measures of how engrossed students are in school tasks, and consistency of effort, participation,

attendance, or good behavior typical of good students (Finn and Voelkl 1993; Green et al. 2008; Marks 2000). *Cognitive engagement* is usually measured as students' investment in learning, depth of processing or quality of thinking, and/or mastering ideas, knowledge, and skills (Blumenfeld 1992; Newmann 1992; Newmann and Wehlage 1993); students' intrinsic motivation to learn (Brophy 1987; Covington 2000; Ryan and Deci 2000a; Sansone and Harackiewicz 2000); and/or the use of self-regulated metacognitive strategies such as planning, monitoring, and evaluating one's understanding of a text (Zimmerman 1990). *Emotional engagement* refers to students' affect and emotions in schools, including interest, boredom, happiness, sadness, and anxiety (Finn 1989; Shernoff et al. 2003; Voelkl 1997).

This characterization of engagement as having three components—behavioral, cognitive, and emotional—has gained widespread acceptance as an organizing principle in the engagement literature, considered valuable in part because it can provide a richer characterization of students' engagement than is possible with a single dimension. In fact, this three-dimensional characterization was integral to the most recent definition of student engagement in an attempt to comprehensively represent recent research on the topic, as compiled in Christenson, Reschly, and Wylie's (2012) *Handbook of Research on Student Engagement*. At the conclusion of the volume, the coeditors offered this definition:

> Student engagement refers to the student's active participation in academic and co-curricular or school-related activities, and commitment to educational goals and learning. Engaged students find learning meaningful, and are invested in their learning and future. It is a multidimensional construct that consists of behavioral (including academic), cognitive, and affective subtypes. Student engagement drives learning; requires energy and effort; is affected by multiple contextual influences; and can be achieved for all learners. (p. 817)

Despite the widespread acceptance of student engagement as multidimensional with three subtypes—behavioral, cognitive, and affective—there has been less agreement as to how each dimension should be conceptualized and measured, and the degree of overlap among them. Thus, the model that grew out of the analytic review concluding that there was a need for a more common conceptualizations and measurements of engagement (Fredricks et al. 2004) also ironically increased potential to multiply theoretical ambiguity by a factor of three.

Engagement as a Primary Framework for Understanding Motivational Outcomes

Engagement has received increasing attention and growing acceptance as an important construct. This is because, regardless of its definition, it is generally agreed to be malleable and responsive to changes in the environment (Dotterer et al. 2007), which makes it a particularly hopeful target of educational interventions and experimentation (Fuligni et al. 2001; Shernoff and Csikszentmihalyi 2009). Most importantly, a primary theoretical model for understanding school dropout centers around engagement (Appleton et al. 2008). As has been noted, a chronic pattern of tardiness, absenteeism,

failing classes, and suspensions characterizes a gradual cycle of disengagement that is ultimately expressed by dropping out of school (Finn 1989). In essence, students fail to emotionally engage with school, and participation and identification with school increasingly decline. Oppositely, school completion is maximized when students maintain and extend multiple forms of participation in school-related activities.

It is often assumed that the quality of one's engagement causes the extent of one's achievement. However, the causal relation likely operates in the other direction as well. For example, low achievement can also be a chief factor fueling a continuing, interactive cycle of disengagement (Finn 1989). Underachievement in school is frequently associated with a low sense of competence and self-esteem, which contributes to the cycle of disaffection and disengagement. This model characterizing the relationship between low engagement and achievement as reciprocal and mutually reinforcing is important partially because it can help to identify low achievers for being at risk for profound disengagement and more serious psychological and educational problems (National Research Council 2004; Finn 1993; Voelkl 1997).

A recent study by Archambault et al. (2009) empirically tested engagement as a predictor of dropout on a longitudinal sample of 11,827 French-Canadian high school students. The study tested the contribution of behavioral, cognitive, and affective measures of engagement towards predicting dropout. Engagement significantly predicted dropout, explaining 12 % of its variance. However, only behavioral measures, based on attendance and discipline (i.e., disruptiveness and rudeness in class), were predictive, whereas affective (i.e., liking school, interest in schoolwork) and cognitive (i.e., effort in schoolwork) measures were not directly associated with dropout. Students reporting decrements in behavioral investment from the beginning of high school presented a higher risk of later dropout. It perhaps should not be surprising that the complete termination of attendance in school is best predicted by prior poor attendance or that the ultimate behavioral sign of disengagement is best predicted by prior behaviors. When students perceived themselves as alienated from their school, they withdrew, as expressed by their attendance, and eventually dropped out. However, other studies have provided evidence that the reason students drop out of school is an underlying lack of emotional engagement, identification with the school, sense of belonging, and belief that anyone at the school cared about them (Voelkl 1997). These studies support the supposition that a gradual cycle of psychosocial disengagement, emotional and cognitive in nature with behavioral manifestations, appears to evolve over the adolescent schooling years for a sizable number of students. This sad state of affairs likely represents a misfit between the needs and expectations of such students and the demands of school (Eccles et al. 1993).

Just like disengagement, higher engagement can also be characterized by an interactive cycle, only towards a *stronger* intensity of involvement. In the case of school engagement, an increased identification and sense of belonging with one's school can stimulate students' engagement with academic work, as may occur with involvement in school-based extracurricular activities or after-school programs (Cooper et al. 1999; Fredricks et al. 2002). As illustrated throughout this book, greater student engagement is often mediated by environmental conditions fostering identity development, self-esteem, initiative, or a sense of purpose.

The positive emotions accompanying the experience of engagement may be characterized as a feeling of being fully alive or uplifted in an aesthetic sense (Dewey 1934). This type of experience frequently occurs as one becomes engrossed or entirely taken up with objects or activities of interest, often resulting in a scientific or creative attitude towards the activity somewhat set apart from the ordinary range of experience (Henri 1923/2007). These individual episodes may gradually accrue meaning, culminating in a strengthened, sustained, and persistent involvement in an area of interest (Nakamura 2001). This is how "small e" engagement progresses and develops into "capital E" Engagement. Academic engagement and achievement are no exception. For example, my colleagues and I found that interest and enjoyment reported at random moments in high school science classes were predictive of the choice of a college major in science two years later, and that momentary engagement in math and science classes was more predictive of academic performance in college than grades in high school (Shernoff and Hoogstra 2001). Findings like these suggest that momentary engagement may be especially predictive of long-term *continuing motivation*. Continuing motivation is an extremely important, but often neglected, educational outcome (Maehr 1976). This is only partly because learning fueled by short-term motivation, as when cramming to pass a test, is all too soon forgotten. More importantly, all significant human achievements rest on continuing motivation, if we subscribe to Einstein's view.

Observations about the importance of emotional engagement, especially as related to long-term motivation, clarifies that the three types of engagement—behavioral, cognitive, and emotional—are not created equal. Behavioral measures appear to be the most strongly correlated with achievement (Shernoff and Schmidt 2008), and yet the construct validity of behavioral measures of engagement, *as a construct distinct from achievement*, may be the most questionable. Many behavioral measures are teacher reported and appear to amount to the teacher's perception of being a "good student." Since grades are also generated from the teacher, it is not so surprising that such measures would be correlated with grades and ultimately longer-term measures of school success or failure (i.e., dropout). More thought might be given to whether engagement in learning deserves to be considered independently from perceptions of how adults would like students to behave in school, especially considering that an increase in "appropriate" behavior in schools may result in a decrease of self-initiated behavior and a waning of flow in the context of formal instruction (Csikszentmihalyi 1993).

Poignantly, a recent study of 1,669 high school students in three top-performing schools in the Bay area (Conner et al. 2010) divided the sample into (a) fully engaged students, or those high on all three measures of engagement; (b) disengaged students, or those low on all three measures of engagement; and (c) those high on behavioral engagement but low in emotional and cognitive engagement. Two thirds of the sample were considered high on behavioral measures of engagement, but only one third exhibited a deeper emotional and cognitive engagement with learning. The "behaviorally engaged only" group mirrored Pope's (2001) study of high-achieving students who were merely "doing school" or approaching it like a grade game. Meanwhile, competing in the game took a psychological toll on

these students, with some of them feeling compelled to cheat. Much like Pope's earlier study, results of Conner et al.'s study demonstrated that the behaviorally engaged only group was comparable to the fully engaged group in terms of high grades, but reported higher levels of internalizing and externalizing symptoms, as well as higher academic stress and anxiety. Thus, high behavioral engagement was related to higher levels of achievement but, unlike emotional and cognitive engagement, was negatively associated with well-being.

Theories of Motivation and How They Pertain to Youth Engagement

When conceptualizing engagement, the question may arise: "Aren't we talking about motivation? And if not, what is the relationship between motivation and engagement?" Of course, motivation and engagement are highly related concepts. For the purposes of discussing engagement in this book, the following distinction may be drawn. There has been a great deal of research and theory in the field of motivation particularly in the last century, and this body of work has generally evolved from a psychological perspective. The focus is placed on the behavior, goals, thoughts, beliefs, or drives of the individual and how these psychological processes may be influenced by the environment. The dominant textbook on motivation in education defines motivation as "The process whereby goal-directed activity is instigated and sustained" (Schunk et al. 2008, p. 4). Goal-directed activity, here, is a possession of the individual. Of course, organizations, institutions, and governing bodies may adopt "group goals," but these generally are not the focus of research on motivation *in education*. As has now been articulated, engagement as discussed in this book is conceptualized as an interactive, ecological process that exists in the interaction or fit between an individual and an ecological system, with activities and relationships with others. One might say that the engagement exists in the activities and the relationships themselves, just as a marital engagement is not a psychological or personal characteristic so much as a characterization of a particular relationship between two people.

I will here consider some, though by no means all, predominant motivational theories or perspectives, not so much to summarize or to critique them, but rather as a commentary on what they imply about the nature of engagement with learning in educational contexts and traditional public schools in particular.

Attribution Theory

Attribution theory (Weiner 1986, 1992, 1995) relates to one's beliefs about the reasons for personal success or failure. Attributions are the factors to which one attributes his or her success or failure. Central to the theory is that effort is an attribution

that generally fosters motivation, whereas ability attributions undermine it. Effort is a superior attribution to ability because its locus of causality is considered to be internal to the individual (rather than external like environmental factors), and, moreover, because it is a controllable factor. Ability is also considered to be an internal trait, but not one over which an individual has control. Furthermore, ability is regarded as relatively stable, but because effort is less stable, it is potentially changeable. Thus, the importance of effort attributions, in contrast to ability attributions, is that effort is controllable. In particular, if one attributes failure to effort, they can reach success by increasing their effort, whereas those who attribute their failures to ability may reason that failure is inevitable no matter how hard they try, a classic case of *learned helplessness* (Seligman 1975).

Attribution theory can be used as a lens to diagnose the general problem of motivation in schools. As Nicholls (1979) has observed, a relatively stable pattern of high- and low-attainment students also assures us of a similarly stable inequality of student motivation. Students with high attainment in school may attribute their success to ability, develop high academic self-concepts, and be more likely to choose challenging achievement tasks and persist with them. Meanwhile, if they fail, they can attribute the cause to lack of effort since the failure is somewhat of an aberration. High achievers therefore develop an adaptive and effective motivational orientation. Low achievers oppositely maintain a low self-concept of ability and lower academic motivation for achievement tasks. They even have an additional reason not to put forth effort, especially in areas in which they are not readily succeeding: If they try hard and remain low in attainment, this would establish beyond the shadow of a doubt that they lack ability. Thus, inequality of achievement outcomes makes inevitable an accompanying inequality of adaptive and maladaptive motivational orientation. Indeed, the adaptive academic learning and motivation of some is sacrificed at the expense of others. Even if a given student's achievement outcomes are not guaranteed, a low-attainment *group* is always certain; high attainment is defined primarily by comparison with it. One larger concern of this educational arrangement is the potential for it to do real psychological harm to the low-attainment group. Those within that group are able enough to make the unfortunate inference that they are stupid, acquiring an orientation of learned helplessness and persistent disengagement in the process.

Intrinsic Motivation

The concept of intrinsic motivation relates to our beliefs as to why we do the things that we do (Deci 1996). That is, the concern is on the *quality of motives*: the qualitatively different types of reasons that people do what they do. The theory of intrinsic motivation may rightly be seen as a backlash to the dominance of behaviorism in psychological theories, which emphasized rewards as reinforcing behavior and boasted that intelligent organisms including humans were infinitely trainable. Since the 1960s, however, intrinsic motivation research exposed various costs associated

with rewards as source of motivation, especially motivation to learn. For example, many controlled studies have shown that compared to those who are intrinsically motivated (i.e., perform a task for its own sake, or purely for the pleasure or enjoyment of it), extrinsically motivated individuals may have inferior outcomes in terms of conceptual understanding, creativity, and longer-term continuing motivation (Sansone and Harackiewicz 2000).

In general, intrinsic motivation leads to active involvement and high engagement in activities, whereas extrinsic motivation may lead to a superficial involvement or "going through the motions." Intrinsic motivation has also been related to a variety of positive psychological outcomes such as self-efficacy and perceived competence (Bandura and Schunk 1981). Furthermore, because intrinsic motivation undergirds creative discovery and inventions that are at the cradle of valued artistic and scientific achievements (Csikszentmihalyi 1996; Einstein 1954), the conditions producing it may also maximize mature intellectual development. However, if intrinsic motivation is believed to be an ideal motivational orientation for learning, this sets up a paradox of intentionality for teachers, one not unfamiliar to parents or others with authority over youth: how to get students to *want* to do what they *need* to do (Larson 2006). As adults, we want for children to do the things that we know are good for them, but we also want them to do so willingly, to "support their autonomy." Or as Rousseau put it in his classic book, *Emile*, the child "ought to do only what he wants, but ought to want only what you want him to do" (Rousseau 1762/1979, p. 120). Doing precisely what they want to do is the hallmark of highly engaged students.

Self-Determination Theory

Self-determination theory (Deci 1996; Deci and Ryan 1985; Ryan and Deci 2000b) posits that feeling free, autonomous, and fully volitional in our actions is a primary motivational factor, as well as fundamental human need. When acting autonomously, people are fully willing to do what they are doing. They act with a sense of interest and commitment. Because their actions emanate from their true sense of self, they are thought to act authentically. In contrast, when people's behavior is pressured or forced, their behavior is not derived from their true sense of self. Furthermore, responding to control or subjugation is often accompanied by a feeling of alienation. Therefore, when students act only because they think the results (e.g., test results, grades) will look good, or because they seek to avoid results that will reflect unfavorably on them, they are being inauthentic from the perspective of self-determination theory. It almost goes without saying, then, that not only can a great deal of student behavior be characterized as inauthentic, but that this inauthenticity has likely only increased with the policy emphasis on testing and accountability, to the point where schools are actively training this inauthenticity. Studies by Deci, Ryan, and colleagues suggest that to the extent students feel controlled by tests, grades, and other external constraints on their intellectual freedom, they will lose interest in the learning activities themselves.

Inauthenticity manifests in one of two ways: compliance or defiance. In a situation in which one is controlled by authority figures, the path of least resistance is passive compliance. This may appear as obedience, even behavioral engagement. But it does not take long before defiance may reveal itself as the opposite side of the same coin: defiance. The coin itself represents a controlling environment. Rebellion and compliance are merely two ways of responding to it. However, as compliant behavior deviates from an alignment with one's authentic self, a sense of alienation builds, and with a flick of a switch, compliance can turn into defiance. Applied to school situations, a given student who appears to be behaviorally engaged today could be a short step away from dropping out of school altogether, or worse, engaging in more serious destructive or violent behavior.

This is one reason that it is not enough to strive for (and to measure) only behavioral engagement. Authenticity cannot be understood only by outward behavior; one must understand the motives and emotions that underlie them. As Deci (1996) states, "It is easy to find children who feel like part of 'the crew'; but it is harder to find ones who feel like captains of their own ship" (p. 9). Deci's sage advice to teachers is to reformulate the question of "how to motivate students" into how to provide the conditions by which learners would motivate themselves, thereby having richer learning experiences with superior creativity and problem-solving capacities.

According to self-determination theory, there are other fundamental human needs in addition to autonomy—most especially the need for competency and relatedness. Relatedness, including feeling loved and connected to meaningful others, has long been observed to be a primary human need and developmental drive (Kegan 1982). Others have argued that people yearn so desperately to feel competent or efficacious in their interactions with the environment is that competence is a fundamental human need (White 1959). Freud is frequently attributed with stating that love and work are the cornerstone of our humanness. Key to self-determination theory is that motivation is fostered by the fulfillment of these basic human needs (Connell and Wellborn 1991).

An important insight of self-determination theory is that there are intermediate positions on the continuum between extrinsic motivation, or feeling controlled, and intrinsic motivation, or feeling fully autonomous. For example, Deci (1996) likens "introjection" to swallowing a rule rather than digesting it—to act in accordance with it, but still feel like it pushes you around. It is characterized by dutiful compliance or halfhearted adherence. Further along the continuum is internalization, in which the rule is digested and accepted as one's own; it becomes part of who one is. Interestingly, when parents support their children's autonomy and are more involved in schooling, students are more likely to internalize the value of schooling (Grolnick and Ryan 1989). Thus, self-determination theory provides a framework for understanding how adult values can be transmitted to subsequent generations. As detailed in Chap. 12, for example, supervised after-school programs can provide the necessary exposure to community service that may not be fully digested at first, but especially in the context of a supportive relational environment that meets the developmental needs of youth, the value for service may become internalized.

The Overjustification Hypothesis

Just like the little boy who on his own accord played the piano every day until he was rewarded with a bicycle for his behavior, at which time his interest turned to the bike, the overjustification hypothesis (Deci 1971; Lepper et al. 1973) suggests that intrinsic motivation is undermined by rewards or other extrinsic incentives for participating in activities where no such reward is necessary. In the scenario above, the little boy was "brainwashed" into believing that the reason for playing the piano was to earn the reward, when that was not his original motivation at all. Thus, the reward "overjustified" the behavior. Most of the studies testing the overjustification hypothesis found support for it (Deci et al. 1999a, b).

The phenomenon may result from rewards as well as other external incentive such as evaluation. According to Dewey, Montessori, Csikszentmihalyi, and others, individuals naturally enter flow and learn when left to their own devices starting in childhood. As those children grow up and develop learning habits in schools, they become evaluated—first by little comments and corrections, and eventually by grades and test scores. Over time, these evaluations take on increasing importance, and that these are the objects to which the adults—parents and teachers—are paying their attention. Soon, and this is no exaggeration in the present schooling environment, *grades and test scores become all that matter* in the eyes of students. Schooling may be a time for socializing with friends and a variety of other activities, but certainly by the adolescent years, students eventually learn that school is also serious business—and that the seriousness is bound up with the evaluations.

By the time a student reaches high school, he or she is literally bombarded by messages about the importance of success or failure in school as measured by these evaluations. If we apply the overjustification hypothesis, it is no wonder that high school students overall suffer from pervasive disengagement with school learning (see Chap. 5). In studies of high school students (Steinberg et al. 1996) and college students alike (Schweinle 2009), the vast majority report that their main reason for doing well in school is grades. In my experience, teachers frequently attest that students will not remain engaged unless they are shown the payoff it will have, either in terms of an immediate reward, subsequent schooling, future employment, future earnings, or some combination. However, can we blame students for investing little time or energy in the educational process if they think that doing so is irrelevant for their future? The problem appears to be that the only activity in which students connect to future welfare is grades and test scores rather than what those measures are supposed to represent.

Expectancy-Value Theory

Building on Bandura's (1977, 1997) emphasis on self-efficacy as central to human motivation, expectancy-value theory (Wigfield and Eccles 2000) asserts that people's

behavior is based on their expectations for success. However, just believing that you can make your bed successfully does not guarantee that the bed will get made. Therefore, expectancies for success are a necessary but not sufficient condition for individuals to act; they also need to value the activity or related goals.

According to expectancy-value theory, individuals will not choose to complete a task if they expect to fail. This alone explains why a significant proportion of students, especially those on the low end of the achievement distribution, do not exhibit high levels of achievement motivation. However, not understanding the value or usefulness of what is being learned routinely applies to *all* students, because failure to explain the relevancy of instruction or why students being asked to complete academic tasks is extremely common to students' experience of schools (Damon 2008). One reason that this problem is so common, unfortunately, is that most instructional activities *have* no actual purpose as far as making an actual contribution to society, other than the education value of the exercise itself—which is to say, the vast majority of school learning is hopefully (*a*) useful exercise. Unfortunately, the "usefulness" of the exercise that adults see as the value of educational activities often cannot maintain the concentration of even the most disciplined adolescents through a lengthy and challenging reading or a 90-min lecture. The common deficiencies both in terms of expectancies for success and valuing of activities as motives for school learning are particularly problematic once you consider that problem solving, reading, memorizing, prolonged listening, and other mental tasks require a great deal of effort as well as maturity of temperament (Willingham 2009).

Self-Regulated Learning

Conceptualized as a student's active involvement in the leaning process involving the learner's metacognitive, motivational, and behavioral processes (Zimmerman 2002; Zimmerman and Martinez-Pons 1988; Zimmerman and Pons 1986), self-regulated learning is highly overlapping with student engagement. It is argued and widely accepted that students can develop the tools necessary to become lifelong learners by becoming self-regulated learners (Paris and Winograd 2003; Zimmerman 1990). Self-regulated learners control their own learning by defining personal goals and meaningful problems. They are able to see how new activities relate to their goals and can accurately appraise their progress to reaching their goals. They are able to self-correct and redirect themselves when learning activities or strategies are not helping to achieve their goals. In addition, they have a good self-awareness of their strength and weakness and employ metacognitive strategies to monitor and continually assess their mental processes. This high degree of self-control over the learning process can be a strong source of motivation.

Teachers can help students to become self-regulated learners. Many teachers readily believe that doing so is important. However, they often find that time for doing so is squeezed out due to the necessity of focusing on preparing students for high-stakes testing. While struggling to find the time to teach self-regulatory strategies is a serious problem among teachers, we might also wonder if self-regulation

for school learning alone is the ultimate goal. Do youth need to become only "self-regulated (school) learners" or "self-regulated livers" to succeed in the twenty-first century? Increasingly, there is the recognition that students need training and assistance with developing not only learning goals but life goals, which include a seemingly paramount but seldom considered virtue of life *dreams.* Where are children even supported to have life dreams, let alone assisted to identify and articulate them? Youth also need training in selecting and implementing strategies to achieve their life goals as well as their smaller learning goals.

Goals Theory

Goal theory is perhaps the most dominant contemporary approach to studying children's achievement motivation. Every year over the past 20 years, more and more papers are generated that utilize it as a theoretical perspective. Early research focused on two achievement goal orientations that students adopt about the nature and purpose of learning, beliefs about ability, and conceptions of school success. The two goals are referred to as mastery and performance goals (Ames and Archer 1987, 1988; Dweck 1986; Dweck and Leggett 1988; Elliott and Dweck 1988; Maehr and Nicholls 1980; Nicholls 1979, 1989). Mastery goals are conceptualized as the desire to attain knowledge and understanding, implying a positive form of motivation. With a mastery goal orientation, effort will lead to success and a sense of mastery; therefore, success is attributed to effort (Ames and Archer 1988). This motivational pattern is maintained over time (Weiner 1979), underscoring the quality of involvement and a continued commitment to learning as a consequence of motivation patterns (Paris and Winograd 1990; Pelletier et al. 1995; Pintrich and De Groot 1990).

In contrast, performance goals represent a desire to appear competent (a performance-approach orientation), or to avoid appearing incompetent (a performance-avoidance orientation) (Ames 1984; Covington and Omelich 1984; Nicholls 1984a; Pintrich 2000). When students are performance oriented, as in competitive situations or when trying to perform better than others, the expenditure of effort can have negative connotations. Perceived ability increases when working less hard than others but decreases when working harder than others (Jagacinski and Nicholls 1984, 1987; Mac Iver 1987). Positive affect is enhanced by success with little effort, but when effort does not lead to success, it can induce embarrassment and threaten self-concept of ability (Covington and Omelich 1979; Jagacinski and Nicholls 1984). Using a comparable dichotomy, Nicholls (1979, 1984b) referred to highly overlapping concerns related to perceptions of ability as an ego-involvement (vs. task-involvement) orientation. Students with such an orientation emphasize the question: "How smart am I?" Competitive or evaluative situations creating a focus on the self rather than the task itself can result in counterproductive strategies to overcome difficulty, such as cheating or ignoring the potential of shared information (Butler 2000).

While mastery goals are typically conceptualized as the desire to attain knowledge and understanding (a mastery-approach orientation), implying a positive form of motivation, mastery goals can also include avoidance. Mastery-avoidance goals

reflect a concern for maintaining one's skills that derives from the fear of losing them (Elliot 1999). In contrast, performance goals represent a desire to appear competent (a performance-approach orientation), or at least to avoid appearing incompetent (a performance-avoidance orientation) (Ames 1984; Dweck and Bempechat 1983; Nicholls 1984a; Pintrich 2000).

Studies show that individuals with mastery goals or under task-involving conditions perform better, choose tasks to optimize learning and skill development, and are oriented towards understanding their work and improving their competency (Ames 1992; Brophy 1983; Meece et al. 1988; Nicholls 1983, 1984a, 1989). A mastery or task orientation is also associated with a wide range of motivation-related variables such as preference for challenging work and effort attributions (Ames and Archer 1988; Elliott and Dweck 1988), intrinsic interest and time spent in learning activities (Butler 1987; Meece et al. 1988; Stipek and Kowalski 1989), effective learning strategies and attitudes towards learning (Ames and Archer 1988; Meece et al. 1988; Pintrich and Garcia 1991; Pintrich and Schrauben 1992), and persistence in the face of difficulty (Elliott and Dweck 1988). Particularly notable is that task involvement has been associated with a greater depth of information processing, implicating the quality of learning itself (Graham and Golan 1991). In terms of emotional well-being, mastery goals are also associated with feeling happy, calm, and excited rather than sad, tense, and tired (Linnenbrink and Pintrich 2003).

Despite all of the attention the goals perspective has received, and all of the research documenting the benefits of a mastery goals or task orientation over an ego-involved one, schools (and therefore teachers) have remained entrenched in conditions emphasizing mainly the testing of abilities and competition, conditions that have only increased under the No Child Left Behind Act. Predictably, these conditions only exacerbate an ego-involvement orientation with learning (Nicholls 1984b; Jagacinski 1992). In fact, in studies in which students were asked to name activities that are enjoyable in their free time (mastery condition), and those that are important to show their superiority (ego-involving condition), academic courses and classes were a dominant category of activities reported as ego-involving but were never mentioned as a mastery-oriented activity (Jagacinski 1992; Jagacinski and Nicholls 1987). This closely mirrors studies using the experience sampling method (ESM) in which students frequently describe their academic and school-related tasks as challenging and important to their future goals, but rarely as enjoyable and interesting, especially in their core academic subjects (Csikszentmihalyi and Larson 1984; Shernoff et al. 2003). In short, students tend to see academic learning as a means to an end rather than intrinsically valuable in its own right.

Personal "Theories of Intelligence"

According to Dweck (2006), the idea of intelligence as a fixed and permanent trait can lead to pervasive pessimism. People come to believe that their prospects of success are limited by their natural abilities. This can be an especially pessimistic

notion for those who repeatedly experience failure, as with learned helplessness (Seligman 1975). In school settings especially, events and activities can become filtered through the preoccupation with success or failure, the fear of looking dumb (or even too smart), and related social rejection. Dweck refers to this as a *fixed mindset* but stresses that we must consciously fight against it in favor of a *growth mindset* based on the belief that one's abilities can be cultivated through one's efforts, not unlike the mastery goal orientation. Sternberg (2005) underscores this view by arguing that the major determinant of whether or not people achieve in life is not ability, but rather *purposeful engagement,* in keeping with Einstein's educational ideal.

The Theory of Flow as Foundational to a Sturdy Conception of Engagement

Have you ever wondered why so many students dislike school but love sports and the arts (Kirsch 2002)? What is it that can make some experiences dreadful and others completely rapturous? By interviewing individuals from diverse backgrounds about their peak experiences, Csikszentmihalyi (1990) identified the phenomenological characteristics of the most meaningful and satisfying moments in life. From rock climbers and chess players to accomplished scientists and artists, optimal experiences in diverse activities were often described in similar terms: intense concentration and absorption in an activity with no psychic energy left over for distractions, a merging of awareness with action, a feeling of control, loss of self-consciousness, and a contraction of the normal sense of time (i.e., time seems to fly). "Flow" describes the subjective buoyancy of experience when skillful and successful action seem effortless, even when great deal of physical or mental energy is exerted. For example, composers have described this shift in consciousness when music is "flowing" from the depth of their souls, stirred by inspiration, like being part of a river. Affectively, it is described as feeling "wonderful" (Custodero 2005, p. 187). In sum, flow is also described as an extraordinary state of intense concentration and enjoyment in intrinsically interesting activities (Csikszentmihalyi 1990).

The subjective experience of flow also appeared to be enhanced by certain properties of the task. In most flow activities, goals were clear, and feedback with respect to meeting those goals was immediate and forthcoming. The activities were also *autotelic*, or a goal in and of itself performed for the sheer experience of it—sometimes even in the face of personal risk or danger. Consistent with the broaden-and-build theory of positive emotions, individuals also felt open to subsequent action.

Flow experiences are valuable for learning and development because they are not only enjoyable in the moment, but each instant of engagement adds to the complexity of the developing self. Flow activities tend to be selected and replicated over time because they are so gratifying. This process of *psychological selection* plays a crucial role in the development of specific interests, goals, and talents over the course of one's life (Delle Fave and Massimini 2003). Highly creative adult artists and

scholars have reported flow when engaged in the creative processes of discovery and invention (Csikszentmihalyi 1996). Flow has been empirically related to the development of talent in adolescent youth specifically (Csikszentmihalyi et al. 1993). Merely being "on task" in classrooms is not necessarily flow, but deeper, more substantive engagement can lead to a longer and more enduring relationship with learning, including one's continued education and schooling. That is, compared to more ordinary experiences, "small e engagement" that is flow-like is more likely to be continually reselected, accrue meaning, and lead to "capital E Engagement."

Controlling Consciousness

A primary tenet of flow theory (Csikszentmihalyi 1990) is that the quality of life is based primarily on the *contents of consciousness* and one's ability to exercise control over them. Thus, the theory frames one's quality of experience as ranging from a lack of control over consciousness to exerting a high level of control over consciousness. A lack of control manifests in the contents of consciousness becoming disordered and chaotic (i.e., "psychic entropy"), which is the "status quo" of consciousness for most people most of the time. Exercising control results in a smoother and more orderly organization of the contents of consciousness (i.e., "psychic negentropy" or "flow"; see Csikszentmihalyi 1990; Csikszentmihalyi and Larson (1984)).

The developing consciousness of adolescents is strongly influenced by the forces of adult socialization on the one hand, and the inner, genetically influenced urge to seeking pleasure and gratify appetites on the other. Parents and teachers attempt to persuade adolescents that if they buckle down to work and become responsible now, they will be better off as adults. Alternatively, a combination of biological urges and social temptations constantly lure adolescents into the excitement or enjoyment of the moment, even while failing to develop skills for the future. In the double bind between genetics and society, some adolescents may respond more strongly to the first force and become a "worker," building skills and taking on adult responsibilities, while others orient towards the second and become more of a "player," partying and having a good time, but not building essential skills for the future. According to (Csikszentmihalyi and Larson 1984), the way out of this double bind is by successfully controlling consciousness. While never becoming free from the demands of society or the physical body, a higher quality of life stemming from control over consciousness is demonstrated by adolescents who also develop goals and interests of their own and in the process obtain intense excitement and enjoyment while simultaneously developing skills in freely chosen activities. Such adolescents are described as "engaged youth," set apart by their sparks of enthusiasm in chosen pursuits. The cumulative effect of the experiences of a worker, player, or engaged youth results in attentional habits that can shape the developing adult consciousness. For example, engaged youth develop the habits of mind to become creative adults living a joyful life in a free society, use their time productively, and overcome adversity, whereas chronically bored or overwhelmed youth may not develop the temperaments, dispositions, and skills to function effectively in the adult world.

One might ask why we haven't made more progress in terms of fostering happier or more engaged children and adolescents. One reason is that it is not enough to merely know that quality of life is enhanced by control over consciousness; one must *do* it, involving both practice and discipline. Of course, this is a job for education, but we currently do not teach youth these all-important practices for fostering engagement and leading a fulfilled life. Certainly, parents, religion, and other influences on formative values play a role, but schools, too, inevitably influence these educative processes, whether they like it or not, due to the sheer number of hours youth spend in them. Increasingly, youth either do not have meaningful life goals or know what they should be, or else they base their goals on those reinforced by the popular culture: shallow materialism or fantasies of easy success, instant celebrity, or excessive wealth. Of course, in every culture, there are exceptions—sages, saints, dissidents, artists, poets, activists, philanthropists, and even teachers—who pursue purposes beyond those that will keep them safe and happy in the main station of life, and who may even make personal sacrifices or suffer significant hardships in pursuit of these purposes. But we cannot sit and passively expect that the cultivation of "higher purposes" will come through either genetics or mainstream society. This is chiefly the job of education, however broadly we may define it.

It is not only the contents of consciousness but attentional *processes* that are important as the selector of those contents. Some—though very few—train themselves to use this priceless resource effectively. Shouldn't schools be places where students learn to focus their attention at will like a laser beam and how to direct attention to what is most needed? How else will adolescents of today learn to navigate the minefield of temptations and increasingly limitless options for media, games, and entertainment? We may be slow to realize just how paralyzing the dizzying array of choices may before the upcoming generations of students (Schwartz 2004). Only recently have researchers and educators taken seriously the importance of managing goal selection and strategies for reaching goals, both in terms of "executive functioning" (Funes et al. 2010; Lemaire and Lecacheur 2011; Novakovic-Agopian et al. 2011) and self-regulation (Bowers et al. 2011; Gestsdottir et al. 2011; Lerner et al. 2011; Mueller et al. 2011; Schmid et al. 2010, 2011; Urban et al. 2010). Developing powers of flow and concentrated will can lead to adaptive, resilient traits including self-confidence, resourcefulness, willingness to take risks, acceptance of responsibility, perspective, openness to new experiences and ideas, willingness to be proactive and take initiative, and attentiveness (Parr et al. 1998).

The Conditions and Experience of Flow

Perhaps the most central condition for flow experiences to occur is that the challenge of the activity is well matched to the individual's skills. Typically, the challenge and skill are high and in balance—individuals stretch their skills to their limits in pursuit of a challenging goal. According to the theory, the various combinations of high or low challenges and skills predict distinct psychological states: (a) apathy, resulting from low challenge and low skill; (b) relaxation, resulting from high skill

but low challenge; (c) anxiety, resulting from high challenge but low skill; and (d) flow, resulting from high challenge combined with high skill.

The relationship between flow and the balance of challenge and skills has been empirically supported in numerous settings (e.g., Csikszentmihalyi and Csikszentmihalyi 1988; Moneta and Csikszentmihalyi 1996).

Research of individuals in everyday life has found that when people stretched their skills to a high level to meet a difficult challenge, they were more likely to be in the flow state of optimal enjoyment and concentration. In intellectual activities, often ideas seemed to flow, leading to continually higher levels of interest and involvement as those ideas evolved. Although flow was not intended as a learning theory (despite obvious overlap with Vygotsky's ideas around the zone of proximal development), enjoyment, concentration, and interest are all integral to the processes of learning if not definitional to the experience of learning. Thus, I have conceptualized engagement with learning as the phenomenological combination of *concentration*, *enjoyment*, and *interest* (Shernoff 2010; Shernoff et al. 2003).

Concentration

As states of absolute absorption in an activity (Csikszentmihalyi 1990), concentration in an activity lies at the heart of any flow experience. In educational contexts, deep absorption has been shown to promote optimal learning experiences (Csikszentmihalyi et al. 1993). For example, studies of cognitive engagement have found that a concentrated task focus and self-regulation of cognitive strategies are important for independent problem solving (e.g., Corno and Mandinach 1983). Studies have also shown that students who were more cognitively engaged in trying to learn, memorize, or organize classroom materials performed better than students who were not as cognitively engaged (Corno and Mandinach 1983; Weinstein and Mayer 1986). Csikszentmihalyi et al. (1993) reported that a sample of talented teenagers concentrated more than their average peers during classroom and study activities but comparatively less while watching television and engaging in social activities.

These findings suggest that the ability to harness concentration for complex mental tasks may be one of the hallmarks of intellectual achievement and talent development. They are also remarkably consistent with the heart of Montessori philosophy, in which the harnessing of one's powers of concentration is vital for development and meaningful learning, especially in the early years. In fact, Montessori (1967) described children's propensity to become completely transfixed in an activity and then to show signs of gratification and satisfaction before moving onto a similar episode of absorption as one of *normalization*; it is only a deviation from this healthy pattern that might signify a problem with growth and development. For this reason, a common practice in Montessori schools is the concerted effort among staff not to interrupt a child when she is deeply involved in an activity until she is "ready." If the rest of the children are going outside to play, the child can finish her involvement with the activity before joining her classmates, but is not forced to do so prematurely (see Chap. 10 for more detail about Montessori practice).

Interest

The effort necessary to drive sustained concentration and thinking is driven by a person's level of interest. Interest in an activity is a fundamental aspect of flow experiences, setting the foundation for continuing motivation and subsequent learning. According to Dewey (1896/1973), interest is what connects the individual to the object of attention and is a natural outgrowth of self-expression. It is in nearly constant operation in directing attention; in fact, as Dewey observed, if one is physically awake, interest inevitably runs in one direction or another. Interest directs attention and provides the basis for becoming engaged with a topic for its own sake (Deci and Ryan 1987).

As pointed out by Rathunde (1993), William James considered interest, or selective attention, to be a central directive force of the mind:

> Millions of items of the outward order are present to my senses which never properly enter into my experience. Why? Because they have no interest for me. My experience is what I agree to attend to. Only those items which I notice shape my mind – without selective interest, experience is utter chaos. (James 1980/1950)

According to James, interest therefore plays a major role in consciousness. By determining the direction of attention, it acts as the director of one's psychic energy. Interests are often not conscious choices, so much as phenomenological events. One does not sit down and decide to become interested in science. Instead, one almost involuntarily ponders, upon coming across a tree in autumn, why a leaf falls at a different rate from, say, a pebble. When observations and thoughts such as these become repeated over time, one develops particular habits of mind. In this particular example, one has begun to ask questions similar to those addressed by scientists. Individual interests may therefore act to filter which information a person attends to and processes, and which a person does not, even though the person may have no reflective awareness of this phenomenon (Renninger 2000).

Dewey believed that there were not only immediate interests; a *mediate interest* is often necessary to bridge activity when there is something standing in between the individual and the object of immediate interest. For example, a medical student may have an immediate interest in doing surgery, but must complete a residency or pass board exams in order to practice medicine. In that case, mediate interest may be a powerful force driving the necessary effort through the intermediate step of obtaining the necessary credential, so long as the means remained identified with the ends of interest. Since much school learning is considered to be an intermediate step to pursuing future goals and interests, mediate interest is therefore enhanced when schoolwork is identified with those ends. If the ends of learning exercises are not clear, mediate interest ends and sustained effort or attention cannot be maintained.

In the example above, if an undivided and authentic interest in becoming a doctor persists, there will be immediate interest in each and every test. But how does this occur without the student being induced by external incentives, and without being truly interested in the test taking? One answer is that the process is mediated by *effort*; mediate interest always requires effort. This effort is part and parcel of one's

self-expression, according to Dewey, so long as there is a real immediate and mediate interest. The educational problem that comes in is that students are commonly made to exert great deals of effort without any real interest in the object of attainment. Not only does this activity exist outside of the students' self-expression, but it actually violates his or her nature. On these grounds, Dewey even considered it *immoral*.

Similarly, sugarcoating material or offering pleasurable inducements to "make" objects interesting risked disrupting or weakening a continued investment of effort and outflow of activity. An artificial livening of the material might provide short-term pleasure, but no lasting interest, and no learning. Dewey equated learning with *lasting* interest. Thus, educators who subscribe to a philosophy of effort or discipline without interest foster students who "just go through the motions," but, as the cliché goes, "drills" (and similar exercises fueled by discipline) only "kill" the interest. For Dewey, solution to this dilemma was to provide the conditions whereby interest could grow naturally out of self-expression.

Although Dewey (1896/1973) recognized the great importance of interest in the learning process, he clarified that the implication of this principle for the teacher was neither to create artificial inducements to attract interest nor to develop an individualized curricula tailored to each child's interests. To humor a child's interest was only to scratch the surface of it, but fails to recognize the power that the interest signified. The key was to discover that power. Dewey thought that teachers did this not by aiming directly for a child's interest, for doing so was to be deceived by a believed importance in *perceived* interest. Rather, Dewey suggested aiming at the conditions that *lie in back of them*. This was achieved not by creating curricula in line with perceived interests but by providing an environment (which includes but is not limited to curricula) supporting the child's underlying impulses, desires, and needs. Such an environment would allow interests to grow naturally alongside other processes of development (Dewey 1975). Practically speaking, this called for flexible and semi-structured curricula. While some educators might worry that lack of structure might lead to time-wasting on nonacademic activities, such a view does not take into account that an interest in one topic or activity can, and normally does, build into interest of another kind. Therein lies the true power of interest. Because it is constantly transforming and redirecting, its potential for learning is nearly limitless if it was properly nurtured.

Indeed, psychological research has consistently shown connections between interest and learning. Acting on intrinsic interest alone, individuals seize opportunities to learn, read, work with others, and gain feedback in a way that supports their curiosity and serves as a bridge to more complex tasks. Hidi and Renninger (2006; Renninger 1990, 2000) conceptualize a developed interest as synonymous with a dispositional tendency to engage with particular domain content. This disposition is rooted both in the tendency to increasingly obtain domain knowledge and to value that knowledge. In acting as a mediator of this process, interest influences not only the objects of attention but also the objects of recognition, memorization, and analysis (Renninger and Wozniak 1985). In this manner, individual interests are constantly in the process of being further developed, even if the focus shifts as a function of new events or knowledge. Individuals with a given interest seize opportunities to

learn, read, work with others, and gain feedback in a way that supports their curiosity and serves as a bridge to more difficult and complex problems or aspects of a particular subject. People who develop such an interest do not need to choose to learn the subject; rather, learning becomes an effortless process (Csikszentmihalyi and Csikszentmihalyi 1988; Hidi 1995).

Schiefele et al. (1992) meta-analysis of 56 studies reveals a positive relationship between interest and achievement (on average, the correlation across content domains was 0.31), with interest accounting for an average of 10 % of the variance in academic achievement.

Enjoyment

When Albert Michelson was asked why he spent so much time on the task of measuring the speed of light, he answered, "Because it is so much fun" (Chandrasekhar 1987). Other scientists refer to their work as "an interesting game" (Dirac 1978), or to the pleasure of solving puzzles (Kuhn 1970); examples are cited in Csikszentmihalyi et al. (1993, p. 114). Flow activities, including intellectually demanding tasks, can also be enjoyable and satisfying, providing a feeling of creative accomplishment. Studies have documented that during flow experiences, tasks are perceived as enjoyable, satisfying, and often exhilarating (Csikszentmihalyi 1990, 1997). In these studies, enjoyment is frequently related to the exercising of one's skills (Csikszentmihalyi 1990). Individuals who have developed their talent and creativity are those who continue to follow their sense of enjoyment in chosen activities (Csikszentmihalyi 1996; Csikszentmihalyi et al. 1993).

Learning is not always enjoyable, but can be. According to cognitive scientist, Daniel Willingham (2009), however, brains were not created primarily for thinking, but rather for a variety of other adaptive and regulatory tasks. As a result, we tend to rely on habit, memory, or other modes of cognition in which our minds can go on autopilot. Actual thinking for humans is slow, hard, and effortful. Because thinking is so hard, Willingham believes conditions have to be just right for thinking or concentration to be pleasurable. For example, a problem cannot be overly complicated, and the correct solution must be perceived as obtainable, or most people will give up. At the same time, there is little pleasure obtained if the correct answer is simply given.

If from the perspective of modern cognitive science, then, thinking in general is slow, effortful, arduous, and uncertain, many students may not like school because they do not experience pleasure from thinking. The educational implication is that teachers may need to rethink how they get their students to think in order to make the thought process pleasurable. For example, steps must be taken to assure that all students can eventually succeed in solving problems with appropriate effort. Furthermore, the teacher need not be the source of all problems that students solve; there is much problem-solving and cognitive challenge that may occur naturally in the course of interacting with peers in the context of structured artistic, scientific, extracurricular, and even athletic activities.

Much information in schools is too complex for the mind to comprehend without the task becoming drudgery, a condition under which many overwhelmed brains will simply check out. Many teachers imparting a lot of information could benefit by slowing down and/or figuring out ways in which some information can be referenced when needed (i.e., on the board, website, reference books) so that it does not take up valuable space in working memory. The way information is organized also has implications with respect to how much learning is enjoyed. For example, much information that is stated can be asked and solicited from students; that is, knowledge can be organized around questions that pique interest and draw on students' fund of experience. Because information and facts are essential to successful problem solving, students must have the necessary background knowledge to engage with the material and avoid becoming discouraged. Finally, just shifting pace or changing tempo can help avoid monotony in expected thinking. In sum, teachers would do well to recognize the importance of creating conditions for flow for doing mental work, making flow a particularly salient model for classroom engagement.

Meaningful Engagement: The Combination of Play-Like and Work-Like Engagement

Engagement in learning as indicated by the experience of simultaneously heightened concentration, enjoyment, and interest is significant for growth and learning. It is activated when the enjoyment of leisure activities is combined with the focus exacted in productive and skill-building activities—culminating in a state engagement that feels like both work and play. Flow is characterized both by concentrated effort while utilizing one's skills and spontaneous enjoyment undergirding intrinsic motivation and continued motivation. This integration of psychological intensity while at work and play is central to flow experiences and positive youth development (Larson 2000). The phrase *meaningful engagement* is therefore utilized throughout the book to indicate the critical balance of both work-like and play-like engagement.

Conclusion

In this chapter, several conceptualizations of student engagement were evaluated, and those that stress the interaction between an organism and its environment were favored over those that stress positive or successful adaptation to school environments specifically. The latter are particularly vulnerable to idealizing procedural engagement (i.e., appearing to be engaged in terms of following the procedures of schooling) rather than substantive engagement (characterized by a persistent depth of cognitive processing and emotional involvement). Similarly, student engagement was distinguished from motivation thought to be primarily the property of an individual. Many theories of motivation help to illuminate obstacles to engagement in schools. A conceptualization of engagement was adapted in which concentration,

enjoyment, and interest are simultaneously heightened. Individuals engaged in this way have experiences similar to flow that seem to fuse aspects of both leisure and work experiences. Engagement that is both work-like and play-like is herein considered to describe *meaningful engagement.*

References

Ames, C. (1992). Achievement goals and the classroom motivational climate. In D. H. Schunk (Ed.), *Student perceptions in the classroom*. Hillsdale: Erlbaum.

Ames, C. (1984). Goal structures and motivation. *Elementary School Journal, 85*(1), 38–52.

Ames, C., & Ames, R. (1984). Systems of student and teacher motivation: Toward a qualitative definition. *Journal of Educational Psychology, 76*(4), 535–556.

Ames, C., & Archer, J. (1987). Mothers' beliefs about the role of ability and effort in school learning. *Journal of Educational Psychology, 79*(4), 409–414.

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology, 80*(3), 260–267.

Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools, 45*(5), 369–386.

Archambault, I., Janosz, M., Fallu, J.-S., & Pagani, L. S. (2009). Student engagement and its relationship with early high school dropout. *Journal of Adolescence, 32*(3), 651–670.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191–215.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.

Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality & Social Psychology, 41*(3), 586–598.

Blumenfeld, P. C. (1992). Classroom learning and motivation: Clarifying and expanding goal theory. *Journal of Educational Psychology, 84*, 272–281.

Bowers, E. P., Gestsdottir, S., Geldhof, G. J., Nikitin, J., von Eye, A., & Lerner, R. M. (2011). Developmental trajectories of intentional self regulation in adolescence: The role of parenting and implications for positive and problematic outcomes among diverse youth. *Journal of Adolescence, 34*(6), 1193–1206. doi:10.1016/j.adolescence.2011.07.006.

Brophy, J. E. (1983). Conceptualizing student motivation. *Educational Psychologist, 18*(3), 200–215.

Brophy, J. E. (1987). Synthesis of research on strategies for motivating students to learn. *Educational Leadership, 44*, 40–48.

Butler, R. (1987). Task-involving and ego-involving properties of evaluation: Effects of different feedback conditions on motivational perceptions, interest, and performance. *Journal of Educational Psychology, 79*(4), 474–482.

Butler, R. (2000). What learners want to know: The role of achievement goals in shaping information seeking, learning, and interest. In C. Sansone & J. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 161–194). San Diego: Academic.

Chandrasekhar, S. (1987). *Truth and beauty*. Chicago: University of Chicago Press.

Christenson, S. L., Reschly, A. L., & Wylie, C. (Eds.). (2012). *Handbook of research on student engagement*. New York: Springer.

Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *Self processes and development* (The Minnesota symposium on child psychology, Vol. 23, pp. 43–77). Hillsdale: Erlbaum.

Conner, J., Pope, D. C., & Galloway, M. K. (2010). *Biennial meeting of the Society for Research on Adolescence*. Philadelphia.

Cooper, H., Valentine, J. C., Nye, B., & Lindsay, J. J. (1999). Relationships between five after-school activities and academic achievement. *Journal of Educational Psychology, 91*(2), 369–378.
Corno, L., & Mandinach, E. B. (1983). The role of cognitive engagement in classroom learning and motivation. *Educational Psychologist, 18*(2), 88–108.
Covington, M. V. (2000). Intrinsic versus extrinsic motivation in schools: A reconciliation. *Current Directions in Psychological Science, 9*(1), 22–25.
Covington, M. V., & Omelich, C. L. (1979). Effort: The double-edged sword in school achievement. *Journal of Educational Psychology, 71*(2), 169–182.
Covington, M. V., & Omelich, C. L. (1984). Task-oriented versus competitive learning structures: Motivational and performance consequences. *Journal of Educational Psychology, 76*(6), 1038–1050.
Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Perennial.
Csikszentmihalyi, M. (1993). *The evolving self: A psychology for the third millennium* (1st ed.). New York: HarperCollins.
Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. New York: HarperCollins.
Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. New York: Basic Books.
Csikszentmihalyi, M., & Csikszentmihalyi, I. S. (Eds.). (1988). *Optimal experience: Psychological studies of flow in consciousness*. New York: Cambridge University Press.
Csikszentmihalyi, M., & Larson, R. (1984). *Being adolescent: Conflict and growth in the teenage years*. New York: Basic Books.
Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1993). *Talented teenagers: The roots of success and failure*. New York: Cambridge University Press.
Custodero, L. A. (2005). Observable indicators of flow experience: A developmental perspective on musical engagement in young children from infancy to school age. *Music Education Research, 7*(2), 185–209.
Damon, W. (2008). *The path to purpose: How young people find their calling in life*. New York: Free Press.
Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality & Social Psychology, 18*(1), 105–115.
Deci, E. L. (1996). *Why we do what we do*. New York: Penguin.
Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior* (Perspectives in social psychology). New York: Plenum.
Deci, E. L., & Ryan, R. M. (1987). The support of autonomy and the control of behavior. *Journal of Personality & Social Psychology, 53*(6), 1024–1037.
Deci, E. L., Koestner, R., & Ryan, R. M. (1999a). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125*(6), 627–668.
Deci, E. L., Koestner, R., & Ryan, R. M. (1999b). The undermining effect is a reality after all – Extrinsic rewards, task interest, and self-determination: Reply to Eisenberger, Pierce, and Cameron (1999) and Lepper, Henderlong, and Gingras (1999). *Psychological Bulletin, 125*(6), 692–700.
Delle Fave, A., & Massimini, F. (2003). Optimal experience in work and leisure among teachers and physicians: Individual and bio-cultural implications. *Leisure Studies, 22*, 323–342.
Dewey, J. (1896/1973). Interest in relation to training of the will. In J. J. McDermott (Ed.), *The philosophy of John Dewey: Two volumes in one*. Chicago: University of Chicago Press.
Dewey, J. (1916/1944). *Democracy and education: An introduction to the philosophy of education* (1st Free Press paperback ed., Free Press Paperback). New York: Collier-Macmillan.
Dewey, J. (1934). *Art as experience*. New York: Minton Balch.
Dewey, J. (1975). *Interest and effort in education* (Arcturus books, AB 129). Carbondale: Southern Illinois University Press.

Dirac, P. A. M. (1978). *Directions in physics*. New York: Wiley.
Dotterer, A. M., McHale, S., & Crouter, A. C. (2007). Implications of out-of-school activities for school engagement in African American adolescents. *Journal of Youth & Adolescence, 36*, 391–401.
Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist, 41*(10), 1040–1048.
Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York: Random House.
Dweck, C. S., & Bempechat, J. (1983). Children's theories of intelligence: Consequences for learning. In S. G. Paris, G. M. Olson, & H. W. Stevenson (Eds.), *Learning and motivation in the classroom* (pp. 239–256). Hillsdale: Lawrence Erlbaum Associates.
Dweck, C. S., & Leggett, E. L. (1988). A social cognitive approach to motivation and personality. *Psychological Review, 95*(2), 256–273.
Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., et al. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist, 48*(2), 90–101.
Einstein, A. (1954). *Ideas and opinions* (Modern Library ed.). New York: Modern Library.
Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist, 34*, 149–169.
Elliott, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality & Social Psychology, 54*(1), 5–12.
Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*(2), 117–142.
Finn, J. D. (1993). *School engagement and students at risk* (p. 117). Washington, DC: National Center for Education Statistics.
Finn, J. D., & Voelkl, K. E. (1993). School characteristics related to student engagement. *Journal of Negro Education, 62*(3), 249–268.
Fredricks, J. A., Alfred-Liro, C. J., Hruda, L. Z., Eccles, J. S., Patrick, H., & Ruan, A. M. (2002). A qualitative exploration of adolescents' commitment to athletics and the arts. *Journal of Adolescent Research, 17*(1), 68–97.
Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59–109.
Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218–226.
Fredrickson, B. L. (2006). The broaden-and-build theory of positive emotions. In M. Csikszentmihalyi & I. S. Csikszentmihalyi (Eds.), *A life worth living: Contributions to positive psychology* (pp. 85–103). New York: Oxford University Press.
Fuligni, A. J., Eccles, J. S., Barber, B. L., & Clements, P. (2001). Early adolescent peer orientation and adjustment during high school. *Developmental Psychology, 37*(1), 28–36.
Funes, C., Stern, S., & Morris, M. (2010). Relationship between strategies and errors of learning and executive functions in college students with academic difficulties. *Archives of Clinical Neuropsychology, 25*(6), 574.
Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology, 95*(1), 148–162.
Gestsdottir, S., Urban, J. B., Bowers, E. P., Lerner, J. V., & Lerner, R. M. (2011). Intentional self-regulation, ecological assets, and thriving in adolescence: A developmental systems model. *New Directions for Child and Adolescent Development, 2011*(133), 61–76. doi:10.1002/cd.304.
Graham, S., & Golan, S. (1991). Motivational influences on cognition: Task involvement, ego involvement, and depth of information processing. *Journal of Educational Psychology, 83*(2), 187–194.
Green, G., Rhodes, J., Hirsch, A. H., Suarez-Orozco, C., & Camic, P. M. (2008). Supportive adult relationships and the academic engagement of Latin American immigrant youth. *Journal of School Psychology, 46*(4), 393–412.
Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology, 81*(2), 143–154.

Henri, R. (1923/2007). *The art spirit*. New York: Basic Books.
Hidi, S. E. (1995). A reexamination of the role of attention in learning from text. *Educational Psychology Review, 7*(4), 323–350.
Hidi, S., & Renninger, K. A. (2006). The four-phase model of interest development. *Educational Psychologist, 41*, 111–127.
Jagacinski, C. M. (1992). The effects of task involvement and ego involvement on achievement-related cognitions and behaviors. In D. H. Schunk & J. L. Meece (Eds.), *Student perceptions in the classroom* (pp. 307–326). Hillsdale: Erlbaum.
Jagacinski, C. M., & Nicholls, J. G. (1984). Conceptions of ability and related affects in task involvement and ego involvement. *Journal of Educational Psychology, 76*(5), 909–919.
Jagacinski, C. M., & Nicholls, J. G. (1987). Competence and affect in task involvement and ego involvement: The impact of social comparison information. *Journal of Educational Psychology, 79*(2), 107–114.
James, W. (1980/1950). *The principles of psychology* (Authorized, ed.). New York: Dover Publications.
Johnson, M. K., Crosnoe, R., & Elder, G. H., Jr. (2001). Students' attachment and academic engagement: The role of race and ethnicity. *Sociology of Education, 74*(4), 318–340.
Kegan, R. (1982). *The evolving self: Problem and process in human development*. Cambridge, MA: Harvard University Press.
Kirsch, J. (2002, February 27). *Opening remarks.* Paper presented at the California State Assembly Education Hearing Committee, Sacramento.
Kuhn, T. S. (1970). *The structure of scientific revolutions*. Chicago: University of Chicago Press.
Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55*(1), 170–183.
Larson, R. W. (2006). Positive youth development, willful adolescents, and mentoring. *Journal of Community Psychology, 34*(6), 677–689.
Lemaire, P., & Lecacheur, M. (2011). Age-related changes in children's executive functions and strategy selection: A study in computational estimation. *Cognitive Development, 26*(3), 282–294. doi:10.1016/j.cogdev.2011.01.002.
Lepper, M. R., Greene, D., & Nisbett, R. E. (1973). Undermining children's intrinsic interest with extrinsic reward: A test of the "overjustification" hypothesis. *Journal of Personality & Social Psychology, 28*(1), 129–137.
Lerner, R. M., Lerner, J. V., Bowers, E. P., Lewin-Bizan, S., Gestsdottir, S., & Urban, J. B. (2011). Self-regulation processes and thriving in childhood and adolescence: A view of the issues. In R. M. Lerner, J. V. Lerner, E. P. Bowers, S. Lewin-Bizan, S. Gestdottir, & J. B. Urban (Eds.), *Thriving in childhood and adolescence: The role of self-regulation processes* (Vol. 133, pp. 1–9). San Francisco: Jossey-Bass.
Linnenbrink, E. A. (2007). The role of affect in student learning: A multi-dimensional approach to considering the interaction of affect, motivation, and engagement. In P. A. Schutz & R. Pekrun (Eds.), *Emotion in education* (pp. 107–124). Boston: Elsevier.
Linnenbrink, E. A., & Pintrich, P. R. (2003). The role of self-efficacy beliefs in student engagement and learning in the classroom. *Reading and Writing Quarterly: Overcoming Learning Difficulties, 19*(2), 119–137.
Mac Iver, D. (1987). Classroom factors and student characteristics predicting students' use of achievement standards during ability self-assessment. *Child Development, 58*(5), 1258–1271.
Maehr, M. L. (1976). Continuing motivation: An analysis of a seldom considered educational outcome. *Review of Educational Research, 46*(3), 443–462.
Maehr, M. L., & Nicholls, J. G. (1980). Culture and achievement motivation: A second look. In N. Warren (Ed.), *Studies in cross cultural psychology*. San Diego: Academic.
Marks, H. M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle and high school years. *American Educational Research Journal, 37*(1), 153–184.
Meece, J. L., Blumenfeld, P. C., & Hoyle, R. H. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology, 80*(4), 514–523.
Moneta, G. B., & Csikszentmihalyi, M. (1996) The effect of perceived challenges and skills on the quality of subjective experience. *Journal of Personality, 64*(2), 266–310.

Montessori, M. (1967). *The absorbent mind* (1st ed.). New York: Holt Rinehart and Winston.
Mueller, M. K., Phelps, E., Bowers, E. R., Agans, J. P., Urban, J. B., & Lerner, R. M. (2011). Youth development program participation and intentional self-regulation skills: Contextual and individual bases of pathways to positive youth development. *Journal of Adolescence, 34*, 1115–1125. doi:10.1016/j.adolescence.2011.07.010.
Nakamura, J. (2001). The nature of vital engagement in adulthood. In M. Michaelson & J. Nakamura (Eds.), *Supportive frameworks for youth engagement* (pp. 5–18). San Francisco: Jossey-Bass.
National Research Council Institute of Medicine of the National Academies. (2004). *Engaging schools: Fostering high school students' motivation to learn*. Washington, DC: The National Academies Press.
Newmann, F. M. (1986). Priorities for the future: Toward a common agenda. *Social Education, 50*(4), 240–250.
Newmann, F. M. (Ed.). (1992). *Student engagement and achievement in American secondary schools*. New York: Teachers College Press.
Newmann, F. M., & Wehlage, G. G. (1993). Five standards of authentic instruction. *Educational Leadership, 50*, 8–12.
Newmann, F. M., Wehlage, G. G., & Lamborn, S. D. (1992). The significance and sources of student engagement. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 11–39). New York: Teachers College Press.
Nicholls, J. G. (1979). Quality and equality in intellectual development: The role of motivation in education. *American Psychologist, 34*(11), 1071–1084.
Nicholls, J. G. (1983). Conceptions of ability and achievement motivation: A theory and its implications for education. In S. G. Paris, G. M. Olson, & H. W. Stevenson (Eds.), *Learning and motivation in the classroom* (pp. 211–237). Hillsdale: Erlbaum.
Nicholls, J. G. (1984a). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*(3), 328–346.
Nicholls, J. G. (1984b). Conceptions of ability and achievement motivation. In R. Ames & C. Ames (Eds.), *Research on motivation in education* (Vol. 1, pp. 39–73). San Diego: Academic.
Nicholls, J. G. (1989). *The competitive ethos and democratic education*. Cambridge, MA: Harvard University Press.
Novakovic-Agopian, T., Chen, A. J. W., Rome, S., Abrams, G., Rossi, A., & D'Esposito, M. (2011). Assessment of sub-components of executive functioning in an ecologically valid settings: The goal processing scale. *Neurology, 76*, A503.
Nystrand, M., & Gamoran, A. (1991). Instructional discourse, student engagement, and literature achievement. *Research in the Teaching of English, 25*(3), 261–290.
Paris, S. G., & Winograd, P. (1990). Promoting metacognition and motivation of exceptional children. *Rase: Remedial & Special Education, 11*(6), 7–15.
Paris, S. G., & Winograd, P. (2003). *The role of self-regulated learning in contextual teaching: Principals and practices for teacher preparation.* Accessed February 10, 2012, from http://www.ciera.org/library/archive/2001-04/0104parwin.htm
Parr, G. D., Montgomery, M., & DeBell, C. (1998). Flow theory as a model for enhancing student resilience. *Professional School Counseling, 1*(5), 26–31.
Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. *Educational Psychologist, 37*(2), 91–106.
Pelletier, L. G., Fortier, M. S., Vallerand, R. J., Tuson, K. M., et al. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). *Journal of Sport & Exercise Psychology, 17*(1), 35–53.
Pintrich, P. R. (2000). Multiple goals, multiple pathways: The role of goal orientation in learning and achievement. *Journal of Educational Psychology, 92*(3), 544–555.
Pintrich, P. R. (2003). Motivation and classroom learning. In I. B. Weiner (Ed.), *Handbook of psychology* (Vol. 7). New York: Wiley.
Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*(1), 33–40.

Pintrich, P. R., & Garcia, T. (1991). Student goal orientation and self-regulation in the college classroom. In M. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement: Goals and self-regulatory processes* (Vol. 7, pp. 371–402). Greenwich: JAI.

Pintrich, P. R., & Schrauben, B. (1992). Students' motivational beliefs and their cognitive engagement in classroom academic tasks. In D. H. Schunk & J. L. Meece (Eds.), *Student perceptions in the classroom* (pp. 149–183). Hillsdale: Lawrence Erlbaum Associates.

Pope, D. C. (2001). *Doing school: How we are creating a generation of stressed-out, materialistic, and miseducated students*. New Haven: Yale University Press.

Rathunde, K. (1993). The experience of interest: A theoretical and empirical look at its role in adolescent talent development. *Advances in Motivation and Achievement, 8*, 59–98.

Renninger, K. A. (1990). Children's play interests, representation, and activity. In R. Fivush & J. Hudson (Eds.), *Knowing and remembering in young children* (pp. 127–165). Cambridge: Cambridge University Press.

Renninger, K. A. (2000). Individual interest and its implications for understanding intrinsic motivation. In C. Sansone & J. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation* (pp. 373–404). New York: Academic.

Renninger, K. A., & Wozniak, R. H. (1985). Effect of interest on attentional shift, recognition, and recall in young children. *Developmental Psychology, 21*(4), 624–632.

Rousseau, J. J. (1762/1979). *Emile: or, on education*. New York: Basic Books.

Ryan, R. M., & Deci, E. L. (2000a). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54–67.

Ryan, R. M., & Deci, E. L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78.

Sansone, C., & Harackiewicz, J. M. (2000). *Intrinsic and extrinsic motivation: The search for optimal motivation and performance*. San Diego: Academic.

Schiefele, U., Krapp, A., & Winteler, A. (1992). Interest as a predictor of academic achievement: A meta-analysis of research. In K. A. Renninger, S. Hidi, & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 183–212). Hillsdale: Erlbaum.

Schmid, K. L., Kiely, M. K., Napolitano, C. M., & Lerner, R. M. (2010, March). *Choosing what to do: Using the 4-H study of positive youth development to study self-regulation in adolescence*. Paper presented at the biennial meeting of the Society for Research on Adolescence, Philadelphia.

Schmid, K. L., Phelps, E., & Lerner, R. M. (2011). Constructing positive futures: Modeling the relationship between adolescents' hopeful future expectations and intentional self regulation in predicting positive youth development. *Journal of Adolescence, 34*, 1127–1135. doi:10.1016/j.adolescence.2011.07.009.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (Eds.). (2008). *Motivation in education: Theory, research, and applications* (3rd ed.). Upper Saddle River: Merrill Prentice Hall.

Schwartz, B. (2004). *The paradox of choice: Why more is less*. New York: HarperCollins.

Schweinle, A. (2009, April). *Definitions of success and motivation among college students*. Paper presented at the annual meeting of the American Educational Research Association, San Diego.

Seligman, M. E. P. (1975). *Helplessness: On depression, development, and death*. San Francisco: W. H. Freeman.

Shernoff, D. J. (2010). *The experience of student engagement in high school classrooms: Influences and effects on long-term outcomes*. Saarbrucken: Lambert Academic.

Shernoff, D. J., & Csikszentmihalyi, M. (2009). Flow in schools: Cultivating engaged learners and optimal learning environments. In R. C. Gilman, E. S. Heubner, & M. J. Furlong (Eds.), *Handbook of positive psychology in schools* (pp. 131–145). New York: Routledge.

Shernoff, D. J., & Hoogstra, L. (2001). Continuing motivation beyond the high school classroom. *New Directions for Child and Adolescent Development, 93*, 73–87.

Shernoff, D. J., & Schmidt, J. A. (2008). Further evidence of an engagement-achievement paradox among U.S. High school students. *Journal of Youth and Adolescence, 36*, 891–903.

Shernoff, D. J., Csikszentmihalyi, M., Schneider, B., & Shernoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18*(2), 158–176.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*(4), 571–581.

Smerdon, B. A. (1999). Engagement and achievement: Differences between African-American and white high school students. *Research in Sociology of Education and Socialization, 12*, 103–134.

Steinberg, L., Brown, B. B., & Dornbusch, S. M. (1996). *Beyond the classroom: Why school reform has failed and what parents need to do*. New York: Simon & Schuster.

Sternberg, R. J. (2005). Intelligence, competence, and expertise. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation*. New York: Guilford Press.

Stipek, D. J. (2002). *Motivation to learn* (4th ed.). Boston: Allyn & Bacon.

Stipek, D. J., & Kowalski, P. S. (1989). Learned helplessness in task-orienting versus performance-orienting testing conditions. *Journal of Educational Psychology, 81*(3), 384–391.

Taylor, C. S., Lerner, R. M., von Eye, A., Balsano, A. B., Dowling, E. M., Anderson, P. M., et al. (2002). Individual and ecological assets and positive developmental trajectories among gang and community-based organization youth. *New Directions for Youth Development, 95*, 57–72.

Theokas, C., Almerigi, J. B., Lerner, R. M., Dowling, E. M., Benson, P. L., Scales, P. C., et al. (2005). Conceptualizing and modeling individual and ecological asset components of thriving in early adolescence. *Journal of Early Adolescence, 25*, 113–143. doi:10.1177/0272431604272460.

Turner, J. C., Thorpe, P. K., & Meyer, D. K. (1998). Students' reports of motivation and negative affect: A theoretical and empirical analysis. *Journal of Educational Psychology, 90*(4), 758–771.

Urban, J. B., Lewin-Bizan, S., & Lerner, R. M. (2009). The role of neighborhood ecological assets and activity involvement in youth developmental outcomes: Differential impacts of asset poor and asset rich neighborhoods. *Journal of Applied Developmental Psychology, 30*, 601–614. doi:10.1016/j.appdev.2009.07.003.

Urban, J. B., Lewin-Bizan, S., & Lerner, R. M. (2010). The role of intentional self regulation, lower neighborhood ecological assets, and activity involvement in youth developmental outcomes. *Journal of Youth and Adolescence, 39*, 783–800. doi:10.1007/s10964-010-9549-y.

Voelkl, K. E. (1997). Identification with school. *American Journal of Education, 105*(3), 294–318.

Weiner, B. (1979). A theory of motivation for some classroom experiences. *Journal of Educational Psychology, 71*(1), 3–25.

Weiner, B. (1986). *An attributional theory of motivation and emotion* (Springer series in social psychology). New York: Springer.

Weiner, B. (1992). *Human motivation: Metaphors, theories, and research*. Thousand Oaks: Sage.

Weiner, B. (1995). *Judgments of responsibility: A foundation for a theory of social conduct*. New York: Guilford Press.

Weinstein, C. E., & Mayer, R. E. (1986). The teaching of learning strategies. In M. Wittrock (Ed.), *Handbook of research on teaching* (pp. 315–327). New York: Macmillan.

White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review, 66*, 297–333.

Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology, 25*(1), 68–81.

Willingham, D. T. (2009). *Why students don't like school*. San Francisco: Jossey-Bass.

Willis, P. E. (1981). *Learning to labor: How working class kids get working class jobs*. New York: Columbia University Press.

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist, 25*(1), 3–17.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice, 41*(2), 64–70.

Zimmerman, B. J., & Martinez Pons, M. (1988). Construct validation of a strategy model of student self-regulated learning. *Journal of Educational Psychology, 80*(3), 284–290.

Zimmerman, B. J., & Pons, M. M. (1986). Development of a structured interview for assessing student use of self-regulated learning strategies. *American Educational Research Journal, 23*(4), 614–628.

Chapter 4
Measuring Student Engagement in High School Classrooms and What We Have Learned

Introduction

The many ways that student (or school) engagement has been measured reflect the variety of ways that it has been conceptualized, as well as the propensity of researchers to conceptualize engagement as a multidimensional latent construct composed of many components. Only a partial list of ways in which student engagement has been measured includes paying attention in class, hours spent on homework, self-regulated learning (e.g., metacognition and use of strategies like checking answers), disruptive behaviors (e.g., disturbing the class, annoying the teacher, not following directions, or office visits for poor behavior), positive affect (e.g., liking school), negative affect (e.g., feeling frustrated or anxious about school), class attendance and tardiness, educational aspirations, grades, and test scores. These measures are sometimes reported by students (i.e., self-reported), sometimes teacher reported, and sometimes observed. However, one shortcoming that most of these measures share is the failure to conceptualize engagement in a broader philosophy of education as discussed in Chap. 2, encompassing psychological well-being and engagement in learning in out-of-school and informal environments, such as civic engagement. Typically, being creative or productive beyond school success narrowly defined is not considered to be inherent to the construct.

Types of Engagement Measures

As discussed in Chap. 3, Fredricks et al. (2004) categorized the various conceptualizations and measurement of student engagement into behavioral, cognitive, and emotional subtypes. We now briefly review how each type has been measured and some of the challenges inherent to each type.

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Behavioral Measures

As noted by Fredricks et al., behavioral measures often place conduct, persistence, and participation onto a single scale, but seem problematic because conduct appears to represent a different dimension of behavior than participation or persistence, meaning that very different profiles of students could score similarly on the measure. Even "pure" measures of conduct often include positive behaviors like homework completion and compliance with school rules (e.g., Finn et al. 1995), while others include negative behaviors (i.e., to indicate disengagement) such as absences, tardiness, or getting into trouble (Finn 1993; Finn and Rock 1997).

Another shortcoming of such measures is that since conduct and behavior are almost always judged by teachers and other adults, behavioral measures provide a uniquely adult perspective. Overall, they amount to how adults expect "good students" to behave in school, ignoring the question as to if some genuinely engaged students do not fit this traditional mold. Even more problematic, it assumes that schools are engaging environments, such that deviance from desired behavior must represent disengagement. Thus, it ignores the possibility that if the environment provided is not engaging, a perfectly adaptive response of an engaged student would be to engage in interests emanating from self-expression but outside of the school environment.

Other behavioral measures include observations of on-task behavior, utilizing scales ranging from off task to deeply involved (e.g., Stipek 2002). However, such measures are often made without reference to effort or thinking. For example, Peterson et al. (1984) reported that students rated by observers as on task were found in subsequent interviews not to be thinking about the material. In addition, Nystrand and Gamoran (1991) found that observed engagement often constituted only *procedural engagement* (i.e., obediently following instructions and going through the motions of schooling), as we will discuss shortly.

Emotional or Affective Measures

As categorized by Fredricks et al. (2004), emotional (or affective) and cognitive measures are also numerous and varied. Some emotional measures attempt to tap into how students feel about their teachers and their subjects (e.g., Finn 1989). Other measures assess work orientation (Steinberg et al. 1996) or students' feelings about their school in general (Johnson et al. 2001; Kalil and Ziol-Guest 2008; Voelkl 1997). However, most of these measures conceptualize student emotion as a psychological trait, whereas the quality and intensity of emotion can vary based on class environment, setting, and contextual/instructional factors. As acknowledged by Fredricks et al., one way to tease out engagement as a function of stable personal characteristics or environmental factors is the use of the Experience Sampling Method (ESM), which will be discussed in more depth later in this chapter.

Cognitive Measures

Cognitive measures of engagement can include flexible problem solving, preference for hard work, independent working styles, and other characteristics of an intrinsic motivational orientation (Connell and Wellborn 1991). Other measures resemble characteristics of a mastery goals orientation such as commitment to understanding or deep-level strategy use and other characteristics of a mastery goals orientation (e.g., Pintrich and De Groot 1990; Wolters 2004). Nystrand and Gamoran (1991; Gamoran and Nystrand 1992) distinguish between *substantive engagement*, a sustained commitment to the content of schooling, and *procedural engagement* or "going through the motions." In their work, Gamoran and Nystrand infer substantive engagement from a high level of instructional discourse and evaluation and thus place most of the locus of engagement on the environment or setting as opposed to the psychological processes of individual students. It is extremely interesting to consider that the typical teacher's "measure" of their students' engagement is indeed what they can observe, and yet there may be a large disconnect between how engaged students *appear* to be and how deeply engaged they actually are emotionally and cognitively.

Some researchers use cognitive engagement and self-regulation almost interchangeably, to measure a conglomeration of metacognitive skills, effort management, regulation of attention, persistence, transfer of concepts to new applications, the monitoring of comprehension, and other self-regulatory strategies (Pintrich and De Groot 1990; Zimmerman and Martinez Pons 1988). A different conceptualization for cognitive engagement relates to depth of processing, thinking, or concentration. One seemingly fruitful but relatively unexplored measure would be domain-specific judgments of the depth of thinking involved in producing a specific work, as could be determined only by an expert or experts in a given domain. A more direct measure of depth of processing is to ask students to rate the depth of their concentration while in the act of engaging in learning activities. This is accomplished with the Experience Sampling Method (ESM).

As suggested earlier, the ESM is also an effective technique for teasing apart the effect of individual and contextual influences on engagement, a measurement issue researchers repeatedly confront (Fredricks et al. 2004). Analyzing ESM data with multilevel models (e.g., HLM; Bryk and Raudenbush 2002) is one effective technique for achieving this (Schmidt et al. 2007). Multilevel models partition the data into a within-subjects (i.e., repeated measures or "beep level") component and a between-subjects (i.e., "person level") component, and if data allows, a between-classes or between-schools component. This allows investigators to see the percentage of variation in engagement (or any ESM variable) in each of these components compared to the others. When there is significant variation in any of these components, it can be predicted by other variables in the model at the corresponding level (i.e., between-subjects variation can be predicted by person-level variables like SES or ethnicity). Frequently, "beep-level" or "within-subjects" variables like classroom activity can be conceptualized as "situational variables." Variation in the effects of those variables can also be modeled as varying by person-level, class-level, or school-level variables. For example, if students are generally more engaged in their

nonacademic classes, the magnitude of this effect may vary by individuals, and if so, the investigator can then ask which person-level (or school-level) variables predict this variation. It may be the case, for instance, that the positive effect of being in nonacademic classes on engagement is greater for African-American students or females. Such "cross-level interaction" effects on engagement have been modeled in the literature (e.g., Shernoff and Schmidt 2008; See Schmidt, Shernoff, and Csikszentmihalyi 2007).

Measuring the Malleability, Complexity, Multidimensionality, and Sources of Engagement

Fredricks et al. (2004) point out that few studies treat engagement as malleable in terms of its capacity to vary both as a function of time as well as context. Most of the studies on engagement are cross-sectional, and few include research questions about the change of engagement over time. One exception is Kelly and Price's (2014) study of diverse students over the transition from middle to high school using the National Educational Longitudinal Study data. It found that engagement declines on average by around 10 % and that significant dispersion in engagement (i.e., the "distance" between engaged and disengaged students) increased by as much as 50 % from the eighth to tenth grade, depending on the measure of dispersion used.

The Experience Sampling Method (ESM), which surveys participants about the quality of their experience at random moments (Hektner et al. 2007), also allows the tracking of individual engagement scores over time. However, the data is very rarely used in this way, partially because there are few longitudinal studies that have utilized the ESM. The Sloan Study of Youth and Social Development as reported in Csikszentmihalyi and Schneider (2000) provides a rare opportunity to measure and predict engagement as measured by the ESM over a period of 2 years. One preliminary analysis (Shernoff and Kelly in progress) found that flow in productive activities to be among the strongest predictors of engagement from grade 6 to grade 12. Perhaps even more importantly for illuminating optimal learning environments, few studies address change in engagement as environmental conditions change. This is another strength of utilizing the ESM methodology, which is remarkably sensitive to subjective perceptions of change in the immediate environment.

Overall, Fredricks et al. (2004) note the predominance of survey measures conceptualizing engagement as an individual trait, and call for "thick descriptions of classroom context" as well as more mixed-methods approaches including rich observational and other qualitative studies. It is clear that research emphasizing motivation and engagement as individual psychological constructs and their linear relationships to covariates is too limiting to be of use to practitioners. New research utilizing confirmatory factor analysis (CFA) is beginning to confirm engagement as a multidimensional construct (Glanville and Wildhagen 2010). Fredricks et al. (2004) suggest that research could take better advantage of the multidimensionality of engagement by studying the multiple dimensions at once, both in combination as well as separately.

Researching Engagement with the Experience Sampling Method (ESM)

In the last 25 years, the study of flow has been pursued mainly through the use of the Experience Sampling Method (ESM) developed by Mihaly Csikszentmihalyi, Reed Larson, and colleagues (see Hektner et al. 2007). To carry out this method, respondents carry a paging device (usually a programmable wristwatch), which signals them at random moments throughout the day. Each time they are signaled, they complete a brief questionnaire in which they answer open-ended and scaled questions about the day and time of the signal, their activities and thoughts, as well as the cognitive, affective, and motivational qualities of their experience. Example items are as follows: "As you were beeped, did you *enjoy* what you were doing?" "How well were you *concentrating*?" "Was this activity *interesting*?" In addition, ratings are solicited for the challenge of the activity and the respondent's skill in the activity. By reporting on immediate experiences throughout waking hours over several days, the ESM solicits repeated "snapshots" of subjective experience and improves upon the problem of recall and estimation errors inherent to surveys and interviews. For reliability and validity information regarding the ESM, the reader is referred to Hektner et al. (2007).

As conceptualized in Chap. 3, colleagues and I have measured *student engagement* as the simultaneous occurrence of high *concentration*, *enjoyment*, and *interest* (e.g., Shernoff 2010; Shernoff et al. 2003). This measure of student engagement is highest when all three components are simultaneously high and, therefore, is meant to combine the work-like engagement evident from high concentration with play-like engagement evident when enjoyment is high. It captures experiences in which the focused, disciplined aspects of work are combined with the enjoyable aspects of leisure, a combination supportive of positive youth development (Larson 2000) and suggestive of *meaningful engagement.* A variety of other researchers have now adopted this measure of student engagement (Arendtz 2007; Cavanagh n.d.; Johnson 2004, 2008; Lindstrom et al. 2005; Park et al. 2011; Strati et al. 2010; Ulriksson et al. n.d.).[1]

[1]With respect to measurement issues, this measure is sometimes questioned because the reliability (or alpha) can be moderate (i.e., usually 0.50–0.80), especially when it falls below 0.70. Alpha is the intercorrelation of items that make up a composite and is frequently examined as an indicator of internal consistency. However, I have preferred this measure precisely because enjoyment and concentration are not always experienced together (i.e., activities demanding concentration are not always perceived as enjoyable), but I am particularly interested in when concentrating on something interesting is perceived as enjoyable. In other words, enjoyment and concentration likely represent different dimensions of engagement, especially the emotional and cognitive dimension, respectively. The composite variable is therefore not the one representing a single dimension of engagement but the multiple dimensions of the flow-based engagement construct. In most studies, these dimensions were then also examined separately, either through the single items (e.g., Shernoff 2010; Shernoff et al. 2003) or through composite variables representing each dimension, often as based on factor analysis (e.g., Coller and Shernoff 2009; Shernoff and Vandell 2007). This approach thus takes advantage of the multidimensionality of engagement by studying the construct both separately (in order to determine which dimensions have influences on which outcomes) and in combination (Fredricks et al. 2004). This is frequently the approach of investigators testing many types of reliability and validity of multidimensional constructs, including engaged living (e.g., Froh et al. 2010).

Epstein and McPartland (1976) effectively argued that the evaluation of schooling should include quality of life and quality of experience variables like satisfaction and enjoyment with school experiences in addition to academic performance variables. This includes subjective well-being, including one's cognitive and affective evaluations of activities and experiences. However, most reports of life or school satisfaction are memory-based global evaluations, perhaps influenced by which specific instances a given student calls to mind upon answering. Thus, the validity of these measures can depend on how representative those experiences called into consciousness truly are. In contrast, the ESM asks about a variety of activities performed and settings encountered over time, and thus the experiences reported vary from moment to moment and day to day.

Seldom are conceptualizations and measures of engagement expansive enough to encompass processes including students' strengths, psychological well-being, or positive experiences as relevant to the functioning of children or adolescents. One example that includes well-being and thriving in school is Philippe et al. (2009) conception of passion as "a strong inclination or desire toward a self-defining activity that one likes (or even loves), finds important (high valuation), and in which one invests time and energy" (p. 4). Here, the enjoyment component of the engagement missing from most conceptualizations and measures of engagement is essential. Like "harmonious passions," discussed by Philippe and colleagues, people engage in activities producing flow because they are enjoyable. The ESM is very adept at measuring affective responses like enjoyment that most people can reliably report, as well as situation-based perceptions such as importance and valuation. The ESM is also profitably used to estimate time use, obtaining a measure of the amount of time and energy respondents spent in given activities (Csikszentmihalyi and Schneider 2000). The ESM has been used to measure time use in school and class contexts specifically (Shernoff et al. 2003).

We now turn to what we have learned about engagement in US public schools according to the ESM measure.

Engagement in US Public Schools

Schools have been observed to contain remarkable degrees of excitement and activity. Hallways, lunch areas, and after-school programs brim with energy; intense interactions are exhibited during sports, extracurricular, and even nonacademic classes. However, that is rarely the case in classrooms (Shinn and Yoshikawa 2008). Thus, initial findings from ESM research in US public schools came as little surprise: Schools were not productive breeding grounds for flow experiences (Csikszentmihalyi and Larson 1984; Mayers 1978). Our research of student engagement focused on a national sample of 526 high school students who participated in the Sloan Study of Youth and Social Development (SSYSD; see Csikszentmihalyi and Schneider 2000) in three separate cohorts in the 1990s. Only self-reports responding to beeps inside of classrooms were analyzed for the purpose of researching student engagement—in all, a total of 3,630 self-reports (see Shernoff et al. 2003).

In the study, each student's engagement could be viewed in relation to his or her own average by using individually-normed ESM scores. On average, high school students were less engaged while in public classrooms than they were elsewhere (Shernoff 2010). Breaking down engagement by its components, students' enjoyment while in class was over one-quarter of a standard deviation below their average in other contexts, suggesting that enjoyment was especially low while in classrooms. Students also indicated being less interested in what they were doing inside their classes than outside of them (apparently, they feel more naturally curious when *away* from the official place they come together to learn). Students' overall mood and self-esteem were also negative while in classroom compared to outside of them. Students did concentrate harder while in class, however, which is consistent with the notion of work environments as a place where children concentrate, but usually did not experience enjoyment at the same time. In a recent, comprehensive study of factors affecting flow in the SSYSD study, students reported less flow during schoolwork than most other activities, about the same amount as they report during paid work (Schmidt et al. 2007).

These basic findings suggest that enjoyment is the key element missing from life in classrooms that makes flow and engagement so rare. Of course, the reasons for students' lack of enjoyment may vary. Some students find little connection between the academic world and their world. Some students have had the prospects for fun kicked out of them when punished for taking risks in the form of bad grades, public humiliation, or other disincentives to explore. Some have rarely experienced success in school. And some, like Einstein, found the consideration of academic materials so distasteful after cramming for exams that they become burned out. In Einstein's case, a recovery period was needed before being able to continue work in an area of genuine interest.

Often, teachers would like to know if students are paying attention at all, and if not, what they are thinking about. As Jackson (1968) observed, even when teachers act as classroom broadcasting stations, it is doubtful that all students are tuned in. More realistically, the teacher is communicating with some students for brief, sporadic periods of time, while the other students are responding to other stimuli, both internal and external. In the 1950s, researchers interested in these questions resorted to playing back audio recordings of class sessions to students and asking them to recall their thoughts and experiences at critical points in the lesson (e.g., Bloom 1953). Those studies tended to find that only about 55–65 % of students' thoughts at various points during the lesson were about the academic topic at hand or related idea.

With the advent of the ESM, it became possible to improve on this line of inquiry by asking students their thoughts and experiences as they occurred rather than relying on later recall. By analyzing responses of what students were *thinking* about while in classrooms at the time they were signaled in class by the ESM, and coding those thoughts into those that related to academics or not, the general picture of students' overall *attention* while in classrooms was telling, although not a great deal different than in the studies that occurred in the 1950s. Students were found to be thinking about the topic at hand about 60 % of the time and about topics entirely unrelated to academics a full 40 % of the time in classrooms (Shernoff 2010).

Statistics like these pose interesting questions for the classroom teacher. It would seem that there are few educational goals in the classrooms more vital than students

attending to the topic or task at hand. Not only do teachers lack the resources to observe the attention levels of their students very accurately, but even if they did, this still would not know *which* students were interested and substantively involved in the various topics, and what to do to enhance the interest of the others (Jackson 1968). As Sizer (1984) pointed out, high school students are actually quite skilled at hiding their disengagement, shrewd in their detachment, and can be described as "artful dodger(s) of considerable skill" (p. 162). As long as there is no requirement, let alone expectation, for students to be engaged or teachers to be engaging, students learn that all they really have to do to survive is hide their disengagement.

The ESM also provides estimates of time use (Larson 1989; Larson and Verma 1999), and applied to public high school classrooms, we have obtained a picture of how students spend their time, when in class. Students seem to spend the largest chunks of time doing individual work (23 %) or listening to lectures (21 %). Combined with taking notes (10 %) and doing homework or studying (7 %), most of students' time in classroom is spent doing independent seatwork. Students also spend a fair amount of time taking a test or a quiz (13 %) and watching TV or a video (7 %). Only smaller amounts of time are spent more interactively, engaged in a discussion (9 %), group or lab work (6 %), or talking with the teacher individually (1 %) (Shernoff et al. 2003). Despite the push for "hands on learning," students in some studies reported using no other material than a textbook in math classes and no materials at all in science classes approximately half of the time (Di Bianca 2000).

These findings support the notion of schooling as largely a passive, independent, and teacher-controlled activity dominated by direct instruction (Goodlad 1984; Schneider et al. 1995; Sizer 1992). Some studies have found that one of the only activities experienced more negatively than class work was homework, especially when completing it alone (Leone and Richards 1989). The increase in large, anonymous educational settings and whole-group instruction right as the developmental needs for intimacy, identity, and cognitive challenge are increasing may set up a particular mismatch between the educational environment and the developmental needs of adolescents (Eccles and Midgley 1989). Alternative approaches appear to be needed in order to provide what repeated studies suggest is most lacking in traditional classrooms: greater enjoyment, motivation, and opportunities for action in the learning process (Bassi and Delle Fave 2004; Csikszentmihalyi and Larson 1984; Shernoff et al. 2003).

Phenomenological and Instructional Factors Improving Student Engagement

There are of course exceptions to overall low engagement in traditional public schools. These may be thought to be in two categories: exceptional students and exceptional situations or contexts. Multilevel analyses tell us that over three-quarters (76 %) of the variation in student engagement can be thought of as a "within-person effect," or variations that the same individual's engagement as he or she moves

from one activity or learning environment to another. Even though engagement is a multidimensional construct influenced by peers, parents, family, schools, and macro-level factors like society, culture, and cohort, only about one-quarter (24 %) of the variation in student engagement was found to exist among students (i.e., differences in some students' average level of engagement compared to others, potentially explainable by personal factors) (Shernoff 2010). While both variance components are substantial and statistically significant, the result suggests that environmental factors can potentially make more of a difference between high and low engagement than personal ones. We therefore first discuss some of the phenomenological and instructional factors influencing fluctuations in engagement before examining personal factors.

Phenomenological and Perceptual Factors

Overall, studies show that internal (i.e., emotional and phenomenological) factors account for more of the variance in student engagement than external (i.e., environmental) ones (Shernoff 2010). Thus, classrooms deserve to be considered as *psychological environments* in which student perceptions are the critical factor (Brophy 1983; Patrick et al. 2003; Schunk and Meece 1992). In general, students were much more engaged when the following perceptions were high: (a) *skill* or *competence;* (b) *challenge (and the challenge was well matched for the skill level)*; (c) *importance;* (d) *control;* and (e) *activity level* (Shernoff 2010; Shernoff et al. 2003). A subsequent ESM study using the same measure of engagement (Johnson 2008) found that engagement was also promoted by students' perception of *belongingness*.

The relationship of each of these student perceptions to academic motivation is firmly supported in decades of research and is central to many dominant theories of motivation (Schunk et al. 2008). For example, research has shown that students have higher motivation, via greater self-efficacy and self-worth, when they perceived themselves to be competent (Covington 1985). Many students may feel at least somewhat uncomfortable or insecure as a function of perceived incompetence, likely resulting in a reluctance to take risks. As educators, we are often dedicated to correcting student's work and helping to fix their weaknesses, but findings like this clarify that if students do not see themselves as good at what they are doing, it is difficult to sustain enjoyment in the learning process. Thus, educators build self-esteem by identifying students' strengths and committing themselves to helping students to build upon them. Supporting students to build on their strengths is something that comes naturally to coaches, more so than many teachers, perhaps because coaches are committed to bringing out their clients' best performance as the clear essential aim (i.e., as opposed to an assortment of competing goals such as content coverage and fulfilling an ambitious assessment regimen) (Biswas-Diener and Dean 2007). The great truth that coaches know is that addressing strengths is intrinsically engaging. Often one serving in a coaching role can see and bring forth a pupil's potential strength before it is even actualized.

Students also became significantly more engaged and concentrated much harder when challenged in classrooms. When invited to engage in complex problem solving instead of confronting topics only superficially, students see more connections, becoming more intrinsically interested, and thus also pay better attention. Newmann (1992) referred to curriculum that is perceived as relevant and fosters higher-order thinking skills in this way as "authentic," although found authentic curriculum to be rare. Although some students might perceive being challenged as arduous and unpleasant, most express an outlook similar to that of the high school student who reported: "I like the fact that I know that I'm challenging myself in school …. I like to work hard and that's the thing I value … I like to be involved in sports and I like to have good times with my friends…but I value those things, really getting involved and getting to know all kinds of people. I'm really happy with what they're teaching me because it's like I really have to use my head. I'm really enthused with what their teaching me" (Newmann et al. 1992, p. 11).

Supporting the conception of authentic instruction and engagement as expressed by this student, ESM studies in classrooms have found that perceptions of challenge is commonly accompanied by perceptions of importance and vice versa. The two perceptions load highly onto the same factor and that factor is strongly predictive of engagement and attention (Shernoff 2010). On the other hand, lack of challenge or relevance is a common reason for disengagement. High school students in the High School Survey of Student Engagement explicitly made the connection between a pervasive lack of challenge and interest. One says: "Our school needs to be more challenging. Students fall asleep because classes aren't really that interesting." Another says: "School is easy. But too boring … more work is not the answer. More interesting would be nice" (Yazzie-Mintz 2007, p. 10).

As previously discussed, flow theory (Csikszentmihalyi 1990; Csikszentmihalyi and Csikszentmihalyi 1988) further predicts that students' engagement is especially maximized when challenges are high enough to obtain students' interests, but also *appropriately matched* to their skills, thereby providing the enjoyment inherent to a reasonable chance of success (Shernoff et al. 2003). Consistent with the theory, our studies found that students were optimally engaged when the level of challenge was a good match for students' skills, such that perceived challenges and skills were both high and in balance. A "good match" or appropriate balance between challenge and skills generally means a reasonable prospect of success with a good faith effort (Brophy 1983). As discussed in Chap. 3, various combinations of high or low challenges and skills predict distinct psychological states: (a) apathy (low challenge, low skill), (b) relaxation (low challenge, high skill), (c) anxiety (high challenge, low skill), and flow (high challenge, high skill). These various flow "channels" or challenge/skill conditions were also very predictive of students' attention in high school classes. For example, students were found to be paying attention 43 % of the time in the apathy condition, but 73 % of the time—almost twice as frequently—when in the "flow channel." Optimally engaging activities were therefore neither trivially simple nor impossibly hard; rather, an appropriate match between challenge and skill led to optimal motivation in terms of higher engagement, intrinsic motivation, mood, and self-esteem (Shernoff et al. 2003).

Both Mihaly Csikszentmihalyi and Martin Seligman have given stories to illustrate that all living organisms naturally seek out experiences that help them to utilize their present potentialities, whether a dog chasing after a ball or a salamander slashing through barriers camouflaging his next meal (personal communications). Take away a good throw or the camouflage, and neither the ball nor the meal are nearly as interesting to the animal biologically programmed to seek the sharpening of its skills, especially those most vital to adaptation or survival.

Vygotsky's concepts of *zone of proximal development* (ZPD) is the range of tasks between what an individual can master on one's own and the additional responsibility that can be taken with the help of a teacher or more skilled peer (Santrock 2010). Vygotsky considered this to be the level of difficulty at which most learning occurs, just one step beyond one's present skill level. For the practicing teacher, however, this principle is easier said than done. There is the tendency to "teach to the middle," seeing the whole class as a single amorphous blob. However, because students come into classrooms with different backgrounds and levels of preparation, the principle of moderate challenge would appear to suggest (a) the need for the instructor to find out students' skill levels and (b) match assignments to those levels. Although requiring instructional skill, some effective instructional approaches effectively differentiate tasks according to the skill level as well as interests and goals of individuals (Tomlinson 1999). Other approaches keep the expectation to master material relatively high for all students and provide the supports and time necessary (which can vary) for all students to meet the challenge (Jones 2009; see Chap. 11).

Other important conditions for flow experiences to occur include *clear goals* (Csikszentmihalyi 1990), which is closely related to perceptions of *importance and relevance*. Knowledge as taught in school is notoriously decontextualized and isolated from real-world applications (Ryan and Powelson 1991). When a student encounters academic material, it is important to ask if there is some way they can connect with it. Do they have any reason to connect with it? What exactly is a student's goal when he or she opens a book or walks into a class? Because students are unlikely to connect with school material unless reasons to do so are clear, connections must be made with the ends of learning for effort and interest to continue. It is especially important for teachers to explain why learning activities will help students to reach their own goals, whether personal, learning, or achievement goals.

Research has shown that highlighting the usefulness of an activity—for example, by telling students its value for reaching future goals—can increase persistence and performance (Simons et al. 2004). Knowing tasks are useful and relevant beyond the immediate situation for other activities or aspects of a person's life is known as *utility value*, one of the main types of values in Eccles and colleagues' (1983) expectancy-value theory discussed in Chap. 3. Understanding utility value may be one of the primary ways that students can come to adopt mastery goals and develop continuing interests. According to Hidi and Renninger's (Hidi and Renninger 2006) four-phase model of interest development, task values can help ignite situation-specific instances of interest in early stages of interest development; then, interest develops from situational to a sustained personal interest as value in the activity, topic, or field deepens.

Students are also theorized to be more engaged and perform better in school when they report feeling in *control* and *autonomous* (i.e., having choice) with respect to their academic involvements and outcomes (Nicholls 1984; Skinner et al. 1990). In fact, engagement is considered to be a mediator in the relationship between control and performance (Skinner et al. 1990). Perhaps one reason that perceptions of autonomy have received a great deal of attention in motivational theory (e.g., Deci and Ryan 1985) is that adolescents feel a lower sense of control in schools than almost any other setting (Csikszentmihalyi and Larson 1984). Research has shown that controlling environments diminish many aspects of engagement, including interest, preference for challenge, and persistence (Connell 1990). Students who do not perform well in school often perceive themselves as having little choice over success or failure (especially since most children do not willingly want to fail), which further influences their future performance in a downward spiral. There appears to be two fundamental beliefs of children who experience failure in school, one about the nature of school and one about their own capacities: (1) If I'm not smart, I won't succeed and (2), therefore, I'm not that smart.

With respect to *activity level*, the predominant passivity in school learning is also well known. Adolescents tend to report more enjoyment and intrinsic motivation as they are increasingly active in most settings (Csikszentmihalyi and Larson 1984), and classrooms characterized by a high level of action and emotional energy are no exception (Olitsky 2007). As Csikszentmihalyi (2001) has suggested, the pervasive passivity of schools may be very unnatural for humans in a bio-evolutionary sense; humans evolved from protecting themselves from danger, sustaining themselves with food and shelter, raising their children, making and utilizing increasingly advanced tools, and other forms of human participatory action, not from sitting and listening to their elders speak for seemingly years on end.

As the terms suggest, *activity*, especially in a social setting like classrooms, is closely related to *interactivity.* The widespread use of standardized testing strengthens the view that learning is an individualized activity with knowledge transmitted from teacher to student. In more contemporary views of learning, acquiring new knowledge and skills comes from contributing to joint activity as a valued member of a community (Lave and Wenger 1991). Thus, interaction in which there is scaffolding among central and more peripheral participants with varying levels of skills in a collective activity is also a key condition for fostering a sense of *belongingness* (Wenger 1998). In contrast, children are reported to lose intrinsic motivation when denied interpersonal involvement (Anderson et al. 1976). More saliently for adolescent-aged youth, Finn's (1989) identification-participation model suggests that students' sense of belongingness, school bonding, or psychological sense of school membership is a vital factor students value for school, commitment, and motivation over time.

Although engagement is on average lower in classrooms than outside of them, it was actually higher in classrooms than elsewhere when the perceptions of challenge, skill, control, relevance, and activity level were each independently high. Nothing influenced students' concentration and attention as much as challenge and relevance, and nothing influenced student's intrinsic motivation, enjoyment, and self-esteem as much as perceptions of competence, autonomy, and activation

(Shernoff et al. 2003). Although research and theory in motivation has been very productive in terms of proposing student perceptions and beliefs that influence students' academic motivation and engagement, how these principles are implemented in large classrooms remains a mystery to the typical teacher. Educators are left with little guidance as to *which instructional practices* promote students' perceptions of competence, appropriate challenge, instructional relevance, autonomy, activity level, and belongingness. Also integral to flow experiences, according to the theory, but relatively unexplored is the importance of *feedback*, especially performance feedback. Clues to how these perceptions are fostered are provided in the sections and chapters that follow.

Classroom Activity and Instructional Method

The activity in which students are involved significantly influences their engagement. In our studies, high school students were more engaged in group and individual work than while listening to a lecture, watching TV or a video, or while taking a test or quiz (Shernoff et al. 2003). While taking a test, students concentrated harder than most other common classroom activities, and they found it to be very challenging and important, but they usually did not enjoy it. While watching a video, the reverse pattern was found: Challenge, concentration, and importance were low, while enjoyment was high.

It is worth commenting on the lecture format in particular. Lectures would appear to be less engaging than other, more active instructional formats, and a big reason that students appear to be attending to content only about half of the time in class. That is the phenomenological nature of listening to a lecture: attention goes in and out. The image of the student staring out the window with mind wondering while the teacher drones on readily comes to mind. Indeed, when a nationally representative sample of high school students was asked to rate their engagement and excitement in ten common pedagogical methods, lecture was the one method students were least excited about. Almost half of all students, 45 %, give lecture the lowest of four possible ratings, indicating that they "are not at all excited about it." In contrast, only 15–35 % of students mark this lowest rating for all of the other methods. From a constructivist perspective, because listening to a lecture is not active, there is also the sense that it is not effective for deep learning or the development of higher-order thinking skills (Jones 2007). However, it may be going too far to believe that lectures are the root of all evil when it comes to engagement. Many students express placing value in lectures; indeed, where engagement is concerned, *how* lectures are conducted may be more important than *if* they are used.

Similar results, although framed slightly differently, were reported by Peterson and Miller (2004). Also using the ESM, the researchers compared the quality of experience of 113 students from a private, mid-Atlantic university while in cooperative learning activities to their experience while in large group instruction. Students were in flow a greater percentage of time during cooperative learning (61 %) than during large group instruction (48 %). Optimal levels of challenge and skill,

perceptions of task importance, and engagement were also higher during cooperative learning. Students were also more frequently thinking about something on task during cooperative learning and thinking about something off task in large groups. This result corroborated our findings that high school students had academically related thoughts 75.2 % of the time during group work and only 65.3 % of the time during lectures (Shernoff et al. 2003).

Whole-group instruction is generally perceived by students as being a controlling mode of instruction dominated by the teacher, whereas more individualized and small group instruction is perceived to be more student controlled (Bidwell and Kasarda 1980; Marks 2000). Research by Grannis (1978) and Stodolsky (1988) indicated that students are more engaged in student-controlled versus teacher-controlled learning activities. A recent experimental study comparing a teacher-controlled versus student-controlled teaching environment was conducted by Wu and Huang (2007). The researchers compared ninth grader's cognitive, emotional, and behavioral engagement in teacher-centered (TC) and student-centered (SC) technology-enhanced science classrooms during a 3-week instructional science unit. The SC class consisted of mini-lectures to introduce concepts, followed by the use of computers to manipulate simulations and working in pairs to learn tasks in a computer lab. In the TC class, concepts were also introduced by lecture and discussion, but rather than using computers, the teacher used a laptop and projector to demonstrate simulations, and guided students to complete learning activities. Students reported higher emotional engagement in the SC class, though it is not completely clear if the driver of this result was the relatively student-controlled class or the use of computer technology. However, low-achieving students improved as much as the high-achieving students in the TC classroom, whereas in the SC classroom, the low achievers had more disengaging behaviors and did not perform as well as their medium- and high-achievers counterparts.

Whole-class recitation instructional formats have also been found to be unidimensional, meaning that students' conception of ability or performance is based on a single narrow criterion. In such classes, there is a greater tendency for students to become stratified by that criterion. Compared to multitask learning in small groups, for instance, there is a perception of higher dispersion or variance of ability in whole-class instruction (Mac Iver 1988), with a greater percentage of students considered below average. In such classes, more students understandably display failure-avoiding behavior such as withdrawing effort to protect their sense of self-worth (Rosenholtz and Rosenholtz 1981).

When responsibility is delegated to small groups and the individuals within them, then multiple types of competencies are needed and valued, which encourages more equalized participation. Not surprisingly, there can be increased participation especially among the lower-status students in the class (Cohen and Lotan 1997). This suggests that how the activity is implemented may have more of an impact on engagement than the activity itself. On balance, research thus suggests that consciously cultivating a multiple abilities or multiple intelligences perspective in the classroom (Armstrong 1994; Gardner 1993), and providing authentic opportunities for collaboration, ownership, and scaffolding across diverse forms of talent

can reduce the problem of disengagement especially among low achievers. Overall, our research found that students were more engaged during instructional methods that present opportunities for action and to demonstrate their skills and were less engaged when passive recipients of information transmitted to the entire class (Shernoff et al. 2003). The teacher's role and implementation will be discussed in more detail in Chap. 6.

School Subject

High school students were also significantly more engaged in their nonacademic courses than in their academic ones. Students reported being the most engaged in art, computer science, and vocational education, the three nonacademic subjects examined in our study. They reported lower engagement in the core academic subjects of social studies/science, English, science, foreign language, history, and math. While students found their academic courses more challenging, they reported higher enjoyment, interest, and motivation in their nonacademic classes. This finding may be partially explained by the differences between subjects with respect to allocation of time using various instructional formats. Students spent more time in high engagement activities (e.g., individual or group work) during their nonacademic classes and more time in low engagement activities (e.g., lecture, video) during their academic ones (Shernoff et al. 2000). Overall, these studies on student engagement suggest that traditional academic subjects would benefit by rethinking their pedagogical strategies in order to provide students greater activity and control.

Our findings also corroborate notable differences in how much students like various school subjects and how difficult and important they find them (Goodlad 1984). Some nonacademic classes like art appeared to emphasize the momentary rewards of greater interactivity, but were not perceived as important, while academic classes like math were perceived as challenging and important but serious, formal, directive, dull, and often devoid of pleasure. Computer science was one rare example of a subject in which students enjoyed their experience while also being challenged by its demands. It is useful to consider the extreme example of math and science on the one hand, and art on the other, to understand variation in students' experiences by subject. Both sciences and the arts can provide opportunities for action and to demonstrate one's skills. Math and science, however, are steeped in a discipline with firm rules and guidelines. Like foreign languages, teachers often describe math as more defined and sequential, but less dynamic than other subjects (Stodolsky and Grossman 1995). Such disciplines may provide ample challenge and a sense of importance, especially for students considering a career in those subjects, but there is a greater risk students will strive to meet those challenges devoid of enjoyment or pleasure. On the other hand, students greatly enjoy the spontaneity and freedom from rigid rules when working on an art project, but may not experience art as requiring disciplined or challenging thought, and few children connections with art activities to their future aspirations.

Conclusion: Towards a Conceptual Model of Student Engagement

Based on our ESM studies of engagement in classrooms (Shernoff et al. 2003; Shernoff and Hoogstra 2001; Shernoff and Schmidt 2008), a conceptual model of optimally engaging learning environments begins to emerge. We detected two fairly separate processes related to engagement occurring in classrooms. Challenge and relevance have strong effects on students' concentration, interest, and attention. We refer to this as *academic intensity*. For example, students taking a test or a quiz, or completing tasks in math class, are usually very challenged and concentrate very hard, but do not enjoy the experience. On the other hand, experiencing high skill, control, and activity level are associated with significant increases in positive affect, enjoyment, esteem, and intrinsic motivation. This process, which we refer to as a *positive emotional response,* is distinguished from the more cognitive nature of academic intensity. For example, students usually enjoy watching TV or a video and attending art class, but often feel these experiences lack challenge and relevance. Both academic intensity and a positive emotional response are integral parts of optimal engagement in the learning process, however. Supporting previous studies (e.g., Csikszentmihalyi and Schneider 2000; Rathunde 1993), we found that both processes seldom operate together during school instruction. That is, students frequently reported experiencing a high level of academic intensity (e.g., high level of concentration in challenging and important activities), but little enjoyment, or they report just the opposite: a positive emotional response (e.g., level of enjoyment, positive affect, and intrinsic motivation), but low academic intensity. Some experiences are lacking in both aspects of engagement, as was frequently the case when listening to the teacher lecture in history class (Shernoff 2010). Activities or environments that can combine both aspects of engagement, such as individual work in computer science class or a group lab activity in science class, are of utmost importance, however, because they suggest examples of *meaningful engagement. Meaningful engagement* refers specifically to engagement that appears to engender both dimensions of academic intensity (i.e., work-like engagement) and a positive emotional response (i.e., play-like engagement). Meaningful engagement may be a key marker of small "e" engagement in educational environments with the potential to facilitate longer-term, big "E" Engagement or lifelong commitment.

References

Anderson, R., Manoogian, S. T., & Reznick, J. S. (1976). The undermining and enhancing of intrinsic motivation in preschool children. *Journal of Personality & Social Psychology, 34*(5), 915–922.

Arendtz, A. (2007). *Student engagement of lower-income high school students: The importance of autonomy, competence, relatedness, and the balance between challenge and skill*. Berkeley: University of California.

Armstrong, T. (1994). *Multiple intelligences in the classroom*. Alexandria: Association for Supervision and Curriculum Development.

Bassi, M., & Delle Fave, A. (2004). Adolescence and the changing context of optimal experience in time: Italy 1986–2000. *Journal of Happiness Studies, 5*(2), 155–179.

Bidwell, C. E., & Kasarda, J. D. (1980). Conceptualizing and measuring the effects of school and schooling. *American Journal of Education, 88*, 401–430.

Biswas-Diener, R., & Dean, B. (2007). *Positive psychology coaching: Putting the science of happiness to work for your clients*. Hoboken: Wiley.

Bloom, B. S. (1953). Thought processes in lectures and discussions. *Journal of General Education, 7*, 160–169.

Brophy, J. E. (1983). Conceptualizing student motivation. *Educational Psychologist, 18*(3), 200–215.

Bryk, A. S., & Raudenbush, S. W. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks: Sage.

Cavanagh, R. (n.d.). *Applying a unified theory of validity: Identifying evidence for validity arguments in an investigation of student engagement in classroom learning* (pp. 16). Perth: Curtin University of Technology.

Cohen, E. G., & Lotan, R. A. (1997). *Working for equity in heterogeneous classrooms: Sociological theory in practice*. New York: Teachers College Press.

Coller, B. D., & Shernoff, D. J. (2009). Video game-based education in mechanical engineering: A look at student engagement. *International Journal of Engineering Education, 25*(2), 308–317.

Connell, J. P. (1990). Context, self, and action: A motivational analysis of self-system processes across the life-span. In D. Cicchetti (Ed.), *The self in transition: Infancy to childhood* (pp. 61–97). Chicago: University of Chicago Press.

Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *Self processes and development* (The Minnesota symposium on child psychology, Vol. 23, pp. 43–77). Hillsdale: Erlbaum.

Covington, M. V. (1985). The motive for self-worth. In R. Ames & C. Ames (Eds.), *Research on motivation in education: Student motivation* (Vol. 1, pp. 77–113). San Diego: Academic.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Perennial.

Csikszentmihalyi, M. (2001). Flow. *Optimal learning environments: Promoting the social, emotional, and intellectual growth of children and adolescents*. Presentation given at the workshop, Madison.

Csikszentmihalyi, M., & Csikszentmihalyi, I. S. (Eds.). (1988). *Optimal experience: Psychological studies of flow in consciousness*. New York: Cambridge University Press.

Csikszentmihalyi, M., & Larson, R. (1984). *Being adolescent: Conflict and growth in the teenage years*. New York: Basic Books.

Csikszentmihalyi, M., & Schneider, B. (2000). *Becoming adult: How teenagers prepare for the world of work*. New York: Basic Books.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior* (Perspectives in social psychology). New York: Plenum.

Di Bianca, R. (2000). *Teaching adolescents: Relationships between features of instruction and student engagement in high school mathematics and science classrooms*. Dissertation, University of Chicago, Chicago.

Eccles, J. S., & Midgley, C. (1989). Stage/environment fit: Developmentally appropriate classrooms for early adolescents. In R. Ames & C. Ames (Eds.), *Research on motivation in education: Goals and cognitions* (Vol. 3, pp. 139–181). San Diego: Academic.

Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J., et al. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motives* (pp. 75–146). San Fransisco: W.H. Freeman.

Epstein, J. L., & McPartland, J. M. (1976). The concept and measurement of the quality of school life. *American Educational Research Journal, 13*(1), 15–30.

Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*(2), 117–142.

Finn, J. D. (1993). *School engagement and students at risk* (p. 117). Washington, DC: National Center for Education Statistics.

Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology, 82*(2), 221–234.

Finn, J. D., Pannozzo, G. M., & Voelkl, K. E. (1995). Disruptive and inattentive-withdrawn behavior and achievement among fourth graders. *Elementary School Journal, 95*(5), 421–434.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59–109.

Froh, J. J., Kashdan, T. B., Yurkewicz, C., Fan, J., Allen, J., & Glowacki, J. (2010). The benefits of passion and absorption in activities: Engaged living in adolescents and its role in psychological well-being. *The Journal of Positive Psychology, 5*(4), 311–332.

Gamoran, A., & Nystrand, M. (1992). Taking students seriously. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 40–61). New York: Teachers College Press.

Gardner, H. (1993). *Multiple intelligences: The theory in practice*. New York: Basic Books.

Glanville, J. L., & Wildhagen, T. (2010). The measurement of school engagement: Assessing dimensionality and measurement invariance across race and ethnicity. *Educational and Psychological Measurement, 67*(6), 1019–1041.

Goodlad, J. I. (1984). *A place called school: Prospects for the future* (A study of schooling in the United States). New York: McGraw-Hill.

Grannis, J. C. (1978). Task engagement and the consistency of pedagogical controls: An ecological study of different structured classroom settings. *Curriculum Inquiry, 8*, 3–37.

Hektner, J. M., Schmidt, J. A., & Csikszentmihalyi, M. (2007). *Experience sampling method: Measuring the quality of everyday life*. Thousand Oaks: Sage.

Hidi, S., & Renninger, K. A. (2006). The four-phase model of interest development. *Educational Psychologist, 41*(2), 111–127.

Jackson, P. W. (1968). *Life in classrooms*. New York: Holt, Rinehart & Winston.

Johnson, L. S. (2004). *Academic engagement from the perspective of flow theory: A comparative analysis of nontraditional and traditional schools*. Doctoral dissertation, Northern Illinois University, DeKalb.

Johnson, L. S. (2008). Relationship of instructional methods to student engagement in two public school settings. *American Secondary Education, 36*(2), 69–87.

Johnson, M. K., Crosnoe, R., & Elder, G. H., Jr. (2001). Students' attachment and academic engagement: The role of race and ethnicity. *Sociology of Education, 74*(4), 318–340.

Jones, S. E. (2007). Reflections on the lecture: Outmoded medium or instrument of inspiration? *Journal of Further and Higher Education, 31*(4), 397–406.

Jones, J. N. (2009, April). *Mastery learning and student engagement in an alternative learning environment: A mixed methods study of school support and student experiences.* Paper presented at the annual meeting of the American Educational Research Association, San Diego.

Kalil, A., & Ziol-Guest, K. M. (2008). Teacher support, school goal structures, and teenage mothers' school engagement. *Youth & Society, 39*(4), 524–548.

Kelly, S., & Price, H. (2014). Changing patterns of engagement in the transition to high school. In D. J. Shernoff, & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations: An NSSE Yearbook*. New York: NSSE Yearbooks by Teachers College Record.

Larson, R. W. (1989). Beeping children and adolescents: A method for studying time use and daily experience. *Journal of Youth & Adolescence, 18*(6), 511–530.

Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55*(1), 170–183.

Larson, R. W., & Verma, S. (1999). How children and adolescents spend time across the world: Work, play, and developmental opportunities. *Psychological Bulletin, 125*(6), 701–736.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Leone, C. M., & Richards, M. H. (1989). Classwork and homework in early adolescence: The ecology of achievement. *Journal of Youth & Adolescence, 18*(6), 531–548.

Lindstrom, L., Ulriksson, L., Arnegard, J., & Brenner, S.-O. (2005). *Experience and achievement in secondary schools: An experience sampling method and interview study* (pp. 46). Stockholm.

Mac Iver, D. (1988). Classroom environments and the stratification of pupils' ability perceptions. *Journal of Educational Psychology, 80*(4), 495–505.

Marks, H. M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle and high school years. *American Educational Research Journal, 37*(1), 153–184.

Mayers, P. L. (1978). *Flow in adolescence and its relation to school experience*. Doctoral dissertation, University of Chicago, Chicago.

Newmann, F. M. (Ed.). (1992). *Student engagement and achievement in American secondary schools*. New York: Teachers College Press.

Newmann, F. M., Wehlage, G. G., & Lamborn, S. D. (1992). The significance and sources of student engagement. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 11–39). New York: Teachers College Press.

Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*(3), 328–346.

Nystrand, M., & Gamoran, A. (1991). Instructional discourse, student engagement, and literature achievement. *Research in the Teaching of English, 25*(3), 261–290.

Olitsky, S. (2007). Promoting student engagement in science: Interaction rituals and the pursuit of a community of practice. *Journal of Research in Science Teaching, 44*(1), 33–56.

Park, S., Holloway, S. D., Arendtz, A., Bempechat, J., & Li, J. (2011, April). *Predicting emotional engagement in academic tasks among low-SES youth: Evidence from a longitudinal study.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Patrick, H., Turner, J. C., Meyer, D. K., & Midgley, C. (2003). How teachers establish psychological environments during the first days of school: Associations with avoidance in mathematics. *Teachers College Record, 105*(8), 1521–1558.

Peterson, S. E., & Miller, J. A. (2004). Comparing the quality of students' experience during cooperative learning and large group instruction. *The Journal of Educational Research, 97*(3), 123–133.

Peterson, P. L., Swing, S., Stark, K., & Waas, G. (1984). Students' cognitions and time on task during mathematics instruction. *American Educational Research Journal, 21*(3), 487–515.

Philippe, F. L., Vallerand, R. J., & Lavign, G. L. (2009). Passion does make a difference in people lives: A look at well-being in passionate and non-passionate individuals. *Applied Psychology: Health and Well-Being, 1*, 3–22.

Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*(1), 33–40.

Rathunde, K. (1993). Undivided interest and the growth of talent: A longitudinal study of adolescents. *Journal of Youth & Adolescence, 22*(4), 385–405.

Rosenholtz, S. J., & Rosenholtz, S. H. (1981). Classroom organization and the perception of ability. *Sociology of Education, 54*, 132–140.

Ryan, R. M., & Powelson, C. (1991). Autonomy and relatedness as fundamental to motivation and education. *The Journal of Experimental Education, 60*(1), 49–66.

Santrock, J. W. (2010). *Adolescence* (13th ed.). New York: McGraw Hill Higher Education.

Schmidt, J. A., Shernoff, D. J., & Csikszentmihalyi, M. (2007). Individual and situational factors related to the experience of flow in adolescence: A multilevel approach. In A. D. Ong & M. von Dulmen (Eds.), *The handbook of methods in positive psychology* (pp. 542–558). Oxford: Oxford University Press.

Schneider, B., Csikszentmihalyi, M., & Knauth, S. (1995). Academic challenge, motivation, and self-esteem: The daily experiences of students in high school. In M. T. Hallinan (Ed.), *Restructuring schools: Promising practices and policies* (pp. 175–195). New York: Plenum Press.

Schunk, D. H., & Meece, J. L. (Eds.). (1992). *Student perceptions in the classroom*. Hillsdale: Erlbaum.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (Eds.). (2008). *Motivation in education: Theory, research, and applications* (3rd ed.). Upper Saddle River: Merril Prentice Hall.

Shernoff, D. J. (2010). *The experience of student engagement in high school classrooms: Influences and effects on long-term outcomes*. Saarbruken: Lambert Academic.

Shernoff, D. J., & Kelly, S. (in progress). *Predicting engagement from 6th to 12th grade: A longitudinal analysis*. DeKalb.

Shernoff, D. J., & Hoogstra, L. (2001). Continuing motivation beyond the high school classroom. *New Directions for Child and Adolescent Development, 93*, 73–87.

Shernoff, D. J., & Schmidt, J. A. (2008). Further evidence of an engagement-achievement paradox among U.S. High school students. *Journal of Youth and Adolescence, 36*, 891–903.

Shernoff, D. J., & Vandell, D. L. (2007). Engagement in after-school program activities: Quality of experience from the perspective of participants. *Journal of Youth and Adolescence, 36*, 891–903.

Shernoff, D. J., Knauth, S., & Makris, E. (2000). The quality of classroom experiences. In M. Csikszentmihalyi & B. Schneider (Eds.), *Becoming adult: How teenagers prepare for the world of work* (pp. 141–164). New York: Basic Books.

Shernoff, D. J., Csikszentmihalyi, M., Schneider, B., & Shernoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18*(2), 158–176.

Shinn, M., & Yoshikawa, H. (Eds.). (2008). *Toward positive youth development: Transforming schools and community programs*. Oxford, UK: Oxford University Press.

Simons, J., Dewitte, S., & Lens, W. (2004). The role of different types of instrumentality in motivation, study strategies, and performance: Know why you learn, so you'll know what you learn! *British Journal of Educational Psychology, 74*(3), 343–360.

Sizer, T. (1984). *Horace's compromise: The dilemma of the American high school*. Boston: Houghton Mifflin.

Sizer, T. R. (1992). *Horace's school: Redesigning the American high school*. Boston: Houghton Mifflin.

Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I've got it: A process model of perceived control and children's engagement and achievement in school. *Journal of Educational Psychology, 82*(1), 22–32.

Steinberg, L., Brown, B. B., & Dornbusch, S. M. (1996). *Beyond the classroom: Why school reform has failed and what parents need to do*. New York: Simon & Schuster.

Stipek, D. J. (2002). Good instruction is motivating. In A. Wigfield & J. Eccles (Eds.), *Development of achievement motivation* (pp. 309–332). San Diego: Academic.

Stodolsky, S. S. (1988). *The subject matters: Classroom activity in math and social studies*. Chicago: University of Chicago Press.

Stodolsky, S. S., & Grossman, P. L. (1995). The impact of subject matter on curricular activity: An analysis of five academic subjects. *American Educational Research Journal, 32*(2), 227–249.

Strati, A. D., Kackar, H. Z., & Schmidt, G. W. (2010, May). *The role of ethnicity and challenge in students' science engagement.* Paper presented at the annual meeting of the American Psychological Association, San Diego.

Tomlinson, C. A. (1999). *The differentiated classroom. Responding to the needs of all learners* (p. 145). Alexandria: Association for Supervision and Curriculum Development.

Ulriksson, L., Lindstrom, L., & Brenner, S.-O. (n.d.). *Engagement and achievement among students in the Swedish secondary school.* Stockholm.

Voelkl, K. E. (1997). Identification with school. *American Journal of Education, 105*(3), 294–318.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press.

Wolters, C. A. (2004). Advancing achievement goal theory: Using goal structures and goal orientations to predict students' motivation, cognition, and achievement. *Journal of Educational Psychology, 96*(2), 236–250.

Wu, H.-K., & Huang, Y.-L. (2007). Ninth-grade student engagement in teacher-centered and student-centered technology-enhanced learning environments. *Science Education, 91*(5), 727–749.

Chapter 5
Engagement as an Individual Trait and Its Relationship to Achievement

Introduction

Engagement may be conceptualized as a personal trait and a context-varying psychological state (Fredricks et al. 2004; Schunk et al. 2008). In Chap. 4, we discussed engagement as the quality of temporal interactions with the learning activities, tasks, and other components of the proximal environment, not dissimilar from the concept of *situational interest* (Hidi and Anderson 1992; Mitchell 1993). However, research has also suggested that fluctuations in engagement (Hunter and Csikszentmihalyi 2003) and boredom (Larson and Richards 1991) are in part the result of individual differences. Therefore, this chapter will discuss engagement as an individual trait potentially influenced by personal, background, or ethnographic factors such as, gender, race, and socioeconomic status. We will then discuss the relationship between engagement and achievement in more depth. The effect of the nearly exclusive focus on grades and achievement on engagement as students progress through the school years is considered in depth in particular.

The 2009 High School Survey of Student Engagement reports that since 2006, an *engagement gap* has been identified comparable to the better-known *achievement gap*. These differences across all three dimensions of engagement (cognitive, behavioral, and emotional) between individuals based on demographic factors have been fairly consistent with other studies in the research literature. For example, females have fairly consistently been reported as having higher school engagement than males (Connell et al. 1994; Finn 1989; Finn and Cox 1992; Johnson et al. 2001; Lee and Smith 1993, 1995; Marks 2000; Martin 2007; Shernoff et al. 2000; Sirin and Rogers-Sirin 2005; Voelkl 1997; Yazzie-Mintz 2007). There are also differences with respect to ethnicity and socioeconomic status. Because these findings are mixed and a bit complex, we will discuss in greater depth below. There are also differences by grade level, with engagement declining, especially from the ninth to the twelfth grade (Eccles et al. 1998; Kelly and Prince 2014; Marks 2000; National Center for Education Statistics 2000; Stipek 2002; Yazzie-Mintz 2010).

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Not surprisingly, students in honors, college preparatory, or advanced classes report higher engagement, and those in special education classes report lower engagement (Yazzie-Mintz 2010).

Students also differ on engagement with respect to psychological adjustment variables. For example, self-esteem and self-efficacy have been found to positively influence student engagement (Connell et al. 1995), and optimism and self-esteem were found to be significant predictors of higher flow among high school students (Schmidt et al. 2007). Time use has also been related to student engagement. For example, the frequency of time spent in extracurricular activities, community events, and after-school programs has been related to student engagement (Diaz 2005; Shernoff 2010; Vandell et al. 2005). Li et al. (in press) reported that time spent eating dinner with one's family was also related to engagement. Similarly, family support was a significant and positive predictor of engagement in the Sloan Study at the University of Chicago (Shernoff 2010). School characteristics such as a strong disciplinary climate, good student–teacher relationships, and high expectations for student success also positively influence engagement, a finding that holds true internationally (Willms 2003).

Race, Socioeconomic Status, and the "Engagement–Achievement Paradox"

Race/ethnicity and socioeconomic status have also been found to influence engagement, but findings have been decisively mixed for both factors. Some studies of high school students have reported that racial and ethnic minority students were more academically engaged than non-Latino white students (Lee and Smith 1995; Shernoff et al. 2000; Uekawa, Borman, & Lee, 2007). For example, Johnson et al. (2001), Park et al. (2010), and Shernoff and Schmidt (2008) found black students to be significantly more engaged compared to their non-black counterparts. Meanwhile, Uekawa et al. (2007) found Latino students to be the most engaged ethnic group in their ESM study, with white and Asian students the least engaged. On the other hand, several studies have found black students to be less engaged than white students (Ainsworth-Darnell and Downey 1998; Fordham and Ogbu 1986; Kao and Tienda 1998; Steinberg et al. 1992; Yair 2000), particularly when engagement is rated by teachers (Downey and Pribesh 2004). Yet other studies have found no racial difference among ethnic groups in engagement (e.g., Marks 2000; Smerdon 1999).

A review of findings with respect to the influence of socioeconomic status reveals a similar pattern. Some studies found higher levels of academic engagement among elementary, middle, and high school students of higher socioeconomic status compared to those of lower socioeconomic status (Finn 1989; Finn and Cox 1992; Lee and Smith 1993, 1995); and internationally, low SES was found to be a primary predictor of disaffection with school (Willms 2003). However, multiple studies utilizing the ESM have found students from low socioeconomic backgrounds to report higher engagement when in school (Lindstrom et al. 2005; Shernoff and Schmidt 2008; Uekawa et al. 2007). Other studies found no significant relationship (Johnson et al. 2001; Marks 2000; Voelkl 1997).

Given the black–white achievement gap in which black students have consistently underachieved in comparison with white students (Rothstein 2004), studies finding higher school engagement among black and other minority students compared to their white counterparts (e.g., Johnson et al. 2001; Kao and Tienda 1998; Lee and Smith 1995) suggest the possibility of an *engagement–achievement paradox.* The paradox refers to the tendency for white students to demonstrate low engagement but high achievement, while some minority groups demonstrate high engagement but not the high achievement that engagement is supposed to engender. Historically, research has demonstrated that black students report higher self-perceptions than white students in a variety of areas, including self-esteem and expectancies for success (Blau 2003; Cooper and Dorr 1995; Graham 1994). Such findings have long been regarded as similarly paradoxical in light of the black–white achievement gap (van Laar 2000); however, recent research is consistent with older studies in suggesting that self-esteem is not related to academic performance for African American students (Sirin and Rogers-Sirin 2004). Other researchers have found black students to hold more positive educational attitudes in comparison to white students (Ainsworth-Darnell and Downey 1998; Blau 2003; Ogbu 1978), which, in combination with the achievement gap, has been referred to as the "attitude-engagement paradox" (Mickelson 1990). Mickelson's research served to clarify this paradox by demonstrating evidence to support the argument that although black students may value education highly, they do not necessarily perceive it as offering them a concrete mechanism for advancing their goals and achieving future success compared to those from other ethnicities. When combined with the persistent achievement gap in which students from low socioeconomic backgrounds and ethnic minorities have underachieved relative to comparison groups, however, studies finding these groups to report higher engagement relative to white and high SES students also suggest the possibility of an *engagement–achievement paradox.*

In our research using the ESM method with a nationally representative sample of high school students (Shernoff and Schmidt 2008), black students reported higher levels of engagement, intrinsic motivation, and affect than other ethnic groups, yet lower levels of achievement. White students reported lower engagement than other ethnic groups, yet higher achievement (except for Asian students). Overall, the findings corroborated other recent studies (e.g., Johnson et al. 2001; Park et al. 2010; Uekawa et al. 2007) in support of an "engagement–achievement paradox" for both white and black high school students. Our findings also contradicted those of other studies' finding that black students are less responsive to instructional improvements or enhancements than students of other ethnicities (Uekawa et al. 2007; Yair 2000). In our study, on-task behavior was associated with higher engagement in classrooms; however, the boost in engagement when on task was stronger for black students than it is for white students. In addition, students from low-income communities reported high engagement, intensity, and intrinsic motivation in classrooms as compared to students in middle, upper-middle, and upper-class communities. Meanwhile, in multiple studies, the socioeconomic composition of schools has been found to be one of the strongest predictors of student achievement (including the racial composition of schools or individual SES), with low SES

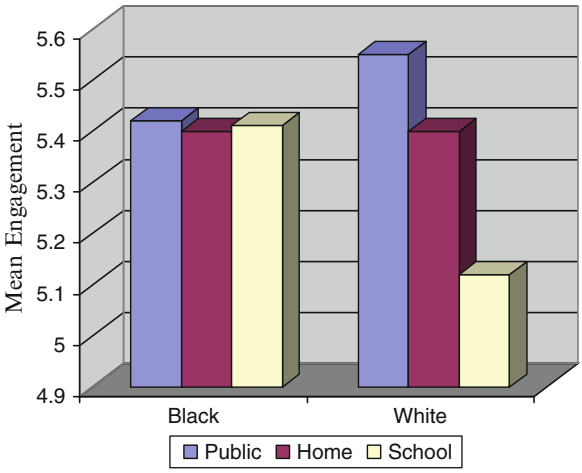

Fig. 5.1 Mean engagement score for black and white students in public, at home, and in school (Shernoff and Schmidt 2008)

communities correlated with lower achievement (Sirin 2005). Taken together, the findings suggested an engagement–achievement paradox for community SES as well as for race and ethnicity.

Both paradoxes, as well as the mixed nature of the findings on the influence of race/ethnicity and SES, may be partially explained by different conceptualizations and measurements of engagement (See Shernoff and Schmidt (2008) for a fuller discussion of these issues). The paradox appears to be the most salient for self-reported and emotional measures of engagement, which may be accounted for partially by socioeconomic and cultural factors. For example, students from relatively impoverished communities have been shown to have more limited opportunities for extracurricular, after-school, or enrichment activities (Shernoff and Schmidt 2008; Vandell et al. 2009). In the Sloan study, high SES and white students in our sample spent more time in learning, active leisure, and extracurricular activities, while low SES, Black, and Latino students spent more time in passive leisure activities and watching TV (Shernoff and Csikszentmihalyi 2000). Since adolescents generally report the highest levels of flow during active leisure activities (Schmidt et al. 2007), the engagement and affect of middle- and upper-class white students may wane in the confines of classrooms compared to other out-of-school contexts experienced as relatively richer. This is consistent with the Sloan study data showing that, for white students, engagement is highest when in public but takes a significant drop when at school (a pattern shared by Asian and Latino students as well); this is not the case for black students, however, who report relatively constant levels of engagement in all three contexts (see Fig. 5.1).

On the other hand, the availability of adult attention and supervision that is present in school could be experienced as more engaging by students who are economically challenged or who find less of it outside of school. Thus, there may be a contrast or "safe haven" effect of being in a structured and supervised school environment, making those students relatively more engaged. This interpretation

suggests that the quality of experience may always be personally relative to some degree. For example, prospect theory claims that all evaluations are relative to a baseline, such that an experience will feel positive if it is an improvement from the baseline experiences preceding it, and feel negative if it is interpreted as worse (Kahneman and Tversky 1984). An example of prospect theory is when the same bottle of wine is a delight to some consumers but a disappointment to one consuming fine wines regularly (Schwartz 2004). Thus, there may be a spoiling or desensitization effect of richer or more stimulating experiences occurring outside of school. A common example of desensitization relates to the psychology of television; researchers have long found that consumers become desensitized over time to violence, sexuality, and other such stimulation, needing increased amounts to provoke the same emotional response (Condry 1989).

A recent paper reporting an engagement–achievement paradox in Sweden along socioeconomic lines suggested that low-achieving but highly engaged students may have a stronger value towards collective activities, whereas high-achieving but low engaged students may be more oriented towards individualistic and ambitious pursuits (Ulriksson et al. n.d.). These kinds of findings are particularly provocative with respect to suggesting possible costs of high socioeconomic status on engagement. Although studies of adolescents growing up in relative affluence have historically been scarce, Luthar and colleagues (Luthar 2003; Luthar and Becker 2002; Luthar and D'Avanzo 1999) have recently exposed an underside to such an upbringing, finding high rates of drug use, depression, anxiety, and other internalizing maladjustments like loneliness and alienation among affluent, suburban high school students, and that such problems are more acute in the suburbs than in the inner cities. The high rates of maladjustment were attributed to achievement pressures and isolation from parents. Parental achievement pressures associated with high SES may lead to a variety of disturbances including stress, substance abuse, and delinquency, but often confer few benefits in terms of facilitating academic success. Doctors' reports reveal that some students feel so much pressure for high performance that they develop stress-related physical symptoms like insomnia and headaches (Luthar and Becker 2002); and some become so stressed about reaching high standards in the eyes of others that they are more likely to develop anorexia or bulimia (Striegel-Moore et al. 1993). Believing that they are valued for their accomplishments more than as individuals, they may fail to develop secure attachments with their parents (Luthar 2003).

The prospect of academic failure may be especially anxiety provoking when longer-term expectations for financial success are high. In increasingly affluent communities, there are growing aspirations for better jobs and social mobility, coupled with the belief that a degree from the right institution increases opportunities and life chances (Kogan and Hanney 2000). Ehrenreich (1990) suggests that some children feel enormous pressure not to "fall back" in terms of wealth or status. Because children are generally expected to move beyond the achievements of their parents, the prospects of falling back and disgracing one's parents can become the "American Nightmare." Students from high SES backgrounds may therefore become preoccupied with results—as symbolized by grades. Given the "American Nightmare," it is less of a mystery why students from high SES backgrounds would

achieve academically, yet report such so few positive feelings in class. An overemphasis on results and achievement over the *process* of learning and discovery may hamper enjoyment. This line of reasoning is supported by Kasser and Ryan's (1996) work which demonstrates that those placing high importance on prestige and occupational success more than satisfying internal goals are at a greater risk for emotional distress.

At the other socioeconomic extreme, we would expect to find a different set of problems that has received most of the attention in the educational literature, including poor attendance, incomplete assignments, failed classes, drop out, lack of motivation, and generalized disengagement from the learning process. In the Sloan study, which was nationally representative in terms of student characteristics, but included only about 13 high schools, it is possible that a culture of caring within some schools may have ameliorated some of the potentially negative effects of low income on student engagement (Battistich et al. 1997). However, the data suggests that even a larger factor was the propensity for students from high SES communities and many white students to experience dramatic drops in engagement in school compared to other contexts. Obviously, both socioeconomic extremes can be highly problematic in terms of engagement, partly because engagement is so related to overall well-being, and quality of life can be compromised at either extreme (Froh et al. 2010).

Despite these patterns, we know that flow and authentic engagement is equally accessible to students of all backgrounds. When students from all ethnicities and backgrounds are practicing their dance moves, making a discovery in a science project, or engaging in community service, they are not always thinking of their grades. Instead, they become passionately focused on their work and do the best job possible, and in the process build skills, confidence, and self-esteem. When students put in extra time working until their satisfaction, and let their imaginations run wild, they can have optimal learning experiences and experience peak engagement characterized by focused concentration, intrinsic interest, and enjoyment while doing their best work (Shernoff and Csikszentmihalyi 2009).

Building a 3-Level Model of Multiple Influences on Engagement

We have observed that student engagement varies both by individual and classroom factors. There can also be influences on student engagement at the level of the school. Also, in the context of a nationally representative ESM study of high school students (Shernoff 2010), we assessed the multiple influences on engagement at different levels of analysis. Due to the nested nature of the ESM data, with beep-level self-report data nested within individual students, who are in turn nested within schools, we utilized multilevel models to determine the relative influence of multiple effects on student engagement. "Situational" (phenomenological and classroom) level variables were entered at level 1, individual variables were entered at level 2, and school variables were entered at level 3.

Multilevel models allowed the variation in student engagement to be partitioned into that occurring among learning situations, among individuals, and among schools. We attempted to account for variations among learning situations (level 1) with high engagement methods (defined as individual and group work based on previous analyses); nonacademic school subjects (art, vocational education, and computer science); and several phenomenological or perceptual variables including students' perception of challenge, skill, control, activity level, and relevance. We attempted to account for variation among individuals with variables including gender, socioeconomic status of the student, ethnicity, grade level, math sequence of the student, family support, and family challenge (i.e., the extent to which the family expects the student to do his or her best). We attempted to account for variation among schools with a socioeconomic indicator for the school community, school support, school challenge, and school-wide usage of high engagement methods. Alpha was set to .05, except for level-3 effects. Because there were only 13 level-3 units, or schools, alpha was set to .10 for effects at level 3.

Results are shown in Table 5.1. The first of the HLM analyses employs an unconditional model (i.e., no predictor variables) to provide estimates on the distribution of variance in student engagement among learning situations, among individuals, and among schools. Presented with the estimation of the random effects (Table 5.1, bottom), most of the variance (approximately 76 %) in engagement occurred among learning situations (level 1). Therefore, variation in student engagement was mostly a function of changes in activities or learning environments that individuals encountered throughout the school week. Approximately, 23 % of the variance in engagement was found among students; and only residual but still significant variation was found among schools (approximately 1.3 %).

Fixed effects are presented in the top portion of Table 5.1. Four models were tested. The first model included only classroom factors (class model), the second added phenomenological factors (level-1 model), the third added individual factors (level-2 model), and the fourth added school factors (level-3 model). The final model reveals that the five perceptual factors – challenge ($\beta = 0.075$, $t = 3.80$, $p < 0.000$); skill ($\beta = 0.163$, $t = 8.89$, $p < 0.000$); control ($\beta = 0.243$, $t = 11.25$, $p < 0.000$); activity level ($\beta = 0.180$, $t = 10.64$, $p < 0.000$); and relevance ($\beta = 0.371$, $t = 23.81$, $p < 0.000$) – all produced strong and positive effects on student engagement. The strong effect of high engagement instructional methods in the classroom model ($\beta = 0.228$, $t = 5.82$, $p < 0.000$) was entirely diminished in the second, third, and final models ($\beta = -0.003$, $t = -0.10$, *n.s.*) due to the introduction of the phenomenological variables. The strong effect of nonacademic subjects in the classroom model ($\beta = 0.249$, $t = 4.27$, $p < 0.000$) was also diminished somewhat but remained significant ($\beta = 0.150$, $t = 2.50$, $p < 0.05$) after the introduction of the phenomenological variables.

The only significant main effects at level 2 (individual) was for 12th grade (versus 10th grade; $\beta = 0.106$, $t = 3.63$, $p < 0.01$) and family support ($\beta = 0.055$, $t = 2.07$, $p < 0.05$). All other variables entered at level 2 were not significant. The only significant school-level effect was the negative effect of SES of the school community ($\beta = -0.061$, $t = -1.94$, $p = 0.06$), indicating lower mean engagement for schools in communities of higher socioeconomic status. The effect of community SES and the

Table 5.1 Student engagement effects: a 3-level HLM analysis (Shernoff 2010)

Estimation of fixed effects	Class model	Level 1 model	Level 2 model	Level 3 model
Intercept	.003	–.042	–.140	–.125
Level 1 (situational) intercept				
High engagement methods	.228***	–.008	–.005	–.003
Nonacademic classes	.294***	.156*	.152*	.150*
Challenge[a]		.075***	.074***	.075***
Skill[a]		.163***	.164***	.163***
Control[a]		.246***	.242***	.243***
Active[a]		.183***	.181***	.180***
Relevance[a]		.373***	.372***	.371***
Level 2 (individual) intercept				
Female			.016	.018
S.E.S. of student			.002	.011
African–American			.105	0.122
Asian			0.070	0.056
Hispanic			.038	.044
Twelfth grade			.113**	.106**
Math sequence[a]			.010	.014
Family support[a]			.057*	.055*
Family challenge[a]			–0.036	–0.033
Level 3 (school)				
S.E.S. of community[a]				–.110*
School support[a]				.079
School challenge[a]				–.001
High engagement methods (school-wide usage) [a]				.002

Estimation of variance components

Random effect	Unconditional model	Level 1 model	Level 2 model	Final model	Percentage reduction (%)
Level-1 – E	.761	491	.491	.491	35
Level-2 intercept 1, R0	.231***	082***	.078***	.077***	63
Level-3 intercept 1/2, U0	.013**	.009***	.004**	.001*	92.0

Note. *$p < .05$; **$p < .01$; ***$p < .001$

[a]Variables are standardized ($M = 0$, $SD = 1.0$) and grand mean centered. Coefficients were specified as fixed

other (nonsignificant) school-level predictors accounted for 92 % of the variation among schools.

Overall, the HLM analysis of student engagement revealed that the experiences of challenge, skill, control, activity level, and relevance were strong influences on student engagement. Instructional method and school subjects were also strong influences, but not after accounting for phenomenological factors. This suggests that certain instructional methods and subjects are experienced as more engaging precisely because of the greater challenge, skill, control activity level, and relevance students experience while participating in them.

The positive effect of the 12th grade indicates that 12th grade students reported higher engagement than 10th grade students. The positive effect of family support suggests that harmonious and supportive relationships in the family are another positive influence on student engagement in high school.

With respect to school influences, the negative effect of the socioeconomic status of the community confirms that students from lower socioeconomic backgrounds reported higher engagement, even after controlling for all of the other factors in the model. Despite the fact that African American students reported higher engagement than students in other ethnicities in separate analyses, the effect was not significant after controlling for all of the other factors in these models. It is quite possible that the effect was accounted for by the negative effect of community SES, given the overlap in socioeconomic status and ethnicity.

The Relationship Between Engagement and Achievement

A good deal of research has shown that student engagement is positively related to achievement, and that disengagement leads to poor academic outcomes in a variety of subjects (Alexander et al. 1997; Glanville and Wildhagen 2007; Kelly 2008; Marks 2000; Rotermund 2008; Shernoff and Schmidt 2008; Sirin and Rogers-Sirin 2004; Voelkl 1997; See Fredricks et al. 2004 for a review). Notably, there was a robust relationship between student engagement and achievement as measured by GPA and test scores in Glanville and Wildhagen's (2007) and Rotermund's (2008) analyses of the nationally representative Education Longitudinal Study of 2002. This applies to studies using not only behavioral measures of engagement but also cognitive measures of substantive engagement.

However, a variety of studies also suggest that engagement is not the same thing as achievement. As with previous studies (e.g., Newmann et al. 1992), nationally representative ESM studies in the United States have found only a modest relationship between engagement and achievement (Shernoff 2010; Shernoff and Schmidt 2008). As was the case in Ulriksson et al.'s (n.d.) study of Swedish youth, a scatterplot of the relationship between high and low engagement and achievement yields no correlation, but roughly equal data in all four quadrants. This does not mean that there are not plenty of engaged students who achieve at high levels, or disengaged students who do not perform well, but that for every student like this there is also one with high achievement but low engagement, or with low achievement but high engagement. This tendency is a significant trend internationally as well as nationally (Willms 2003). Larson and Richards (1991) found higher rates of boredom at school among those with higher achievement test scores. It is possible that many high-achieving students can succeed in school with low levels of engagement because they find it relatively easy, while many low-achieving students are more engaged with the same material because they find it more challenging.

Regardless of the exact relationship between engagement and achievement, it is likely to be complex. In general, there is a fair amount of evidence that behavioral

measures are related to achievement and success in school (Fredricks et al. 2004). In the Beginning School Study (Alexander et al. 1993, 1997), for example, teachers' ratings of behavioral engagement in the first grade predicted grades over the first 4 years of school, achievement test score gains, and even drop out in high school. On the other hand, behavioral measures do not appear to be a good predictor of performance on assessments requiring a deep understanding of the material (Fredricks et al. 2004), suggesting that behavioral engagement is often not substantive (Nystrand and Gamoran 1991). Although substantive engagement likely has a cognitive and emotional component that the ESM is particularly effective in capturing, there is less research linking emotional engagement to achievement, and the nature of the relationship is less consistent. Some studies have shown that engagement composed of both behavioral and emotional measures is related to achievement (Connell et al. 1994; Skinner et al. 1990), but the unique contribution of emotional engagement to that relationship cannot be determined. Other studies have shown that emotional engagement defined as school identification and belongingness was related to achievement test scores in the fourth and seventh grades for white but not black students (see Shernoff and Schmidt (2008) for a full discussion of these issues, including black–white discrepancies).

Several studies have suggested a meaningful relationship between achievement and the ESM measure of engagement that we have utilized in our research on engagement (i.e., composite of concentration, interest, and enjoyment). For example, Bempechat et al. (2010) compared higher and lower achievers in an ethnically diverse sample on engagement and quality of experience when doing their schoolwork, as well as achievement-related beliefs. Higher achievers consistently reported not only significantly higher engagement but also greater feelings of understanding and competence when completing their schoolwork compared to the lower achievers. However, they also reported significantly higher levels of negative affect such as feeling scared and confused, and this difference was higher as the perceived challenge of the work increased. It was as though higher achievers were accustomed to a higher level of confidence, but were more worried when higher levels of challenge disturbed that sense of security in their abilities. Lower achievers, on the other hand, reported feeling that they had more choice and feeling guiltier when they were doing their schoolwork. Many lower achievers appeared to act on their desire for leisure over schoolwork in reporting to complete school sporadically. Their greater experience of guilt when doing their homework may have been the emotional by-product of choosing to not spend the time and effort necessary to meet academic expectations.

High achievers were also more likely to express three different types of mastery-related behaviors and habits. The first, which was labeled mastery-learning goals, reflected enjoyment in learning new things, similar to the mastery-approach goals discussed throughout the literature (Ames 1992). The second type, which was labeled mastery-behavior, referred to persistence to work and invest effort until mastery was achieved even when they did not want to. The higher achievers were more likely to "bite the bullet" and exercise discipline to learn what was necessary. The third type, which was labeled, mastery-emergent standards, communicated the importance high achievers placed on holding themselves to high personal standards,

either to a certain level of performance or a sufficient level of learning. High achievers were also more likely to express conscientiousness for their future educational or career goals. These internally driven goals appeared to guide their investment to learn and master material in a mature and purposeful way.

The lower achievers also expressed mastery-related dispositions, but with the tendency to invest effort inconsistently, such as putting more effort into some classes than others. On average, they considered the investment to learn somewhat more optional depending on conditions. Lower achievers were also more likely to express extrinsic motives, as well as the tendency to avoid work altogether. Their more extrinsic motivational orientation reflected the tendency to work or learn only when the need to do so was imposed from the outside, usually by the teacher. The tendency to avoid work was frequently stated as a preference to engage in more enjoyable or fun activities, or a failure to see the point in working hard because doing so was not necessary to reach one's goals. Both interview and ESM data converged on the central difference that higher achievers were more invested in schooling, and seemed to take both their school learning and performance goals more seriously. Overall, their educational values were decisively stronger.

In another recent ESM study of engagement using a quasi-experimental design, Larson (2010) compared engagement and science literary achievement between students taking a 5-day science literacy unit, designed specifically to develop student interest, and a control group learning the same science content in a traditional manner. As hypothesized, results showed a significant difference between the treatment and control group both in terms of engagement (as measured the same engagement composite from the ESM as used by Shernoff (2010)) and conceptual understanding (as measured by science essays similar to those given on the ISATs). The effect size associated with the effect of the treatment condition on both engagement and conceptual understanding was large. In addition, there was a significant, moderate correlation between engagement and conceptual understanding in the full sample. The suggestion that engagement may play a mediating role in academic attainment is also supported by a study drawn from the large, nationally representative 4H Longitudinal Study sample (Li et al. 2009). The study found that engagement mediated the positive effect of educational expectations on achievement.

Not surprisingly, engagement has become a dominant framework for educational institutions to improve student retention and a variety of other student outcomes (Appleton et al. 2008), emerging as an important component in school interventions and reform efforts (Marks 2000), including at my own institution, Northern Illinois University. Without a doubt, "engagement" is *the* new buzz word in many schools. The movement for schools to target engagement raises an interesting question, however: is engagement enough? That is, will having engaged students in and of itself guarantee better learning and positive student outcomes? This is a difficult question to answer, depending on what engagement is intended to mean and what the criteria for high engagement is when applied to an entire student body. We can be relatively certain that engagement is a necessary condition for learning, even if we are less sure it is a sufficient one to improve many student outcomes. There is some evidence that engagement explains why at least some at-risk students succeed academically

(Finn 1993). Those who lack participation and engagement are undoubtedly at greater risk for negative outcomes such as absenteeism, truancy, delinquency, and drop out, and we also know that such a pattern of disengagement among an entire student body is related to school characteristics (Finn 1989; Finn and Voelkl 1993).

The Influence of Ability and Achievement Orientations on Engagement

In addition to considering the effect of engagement on achievement, a useful question is: what are the effects of achievement, or orientations towards achievement, on engagement? We know that ability level can be a significant factor influencing the quality of school experience. Csikszentmihalyi et al. (1993) found that talented and committed adolescents reported being happier, more cheerful, and more motivated in school than their less talented counterparts. Consistent with that study, those with high self-efficacy among a sample of 130 Italian adolescents associated their schoolwork with optimal experience unlike those with low self-efficacy (Bassi et al. 2007). The literature also supports a relationship between academic achievement and quality of experience in school, but the nature and directionality of this relationship is unclear. For example, a number of studies have associated flow with commitment and achievement in the high school years (e.g., Carli et al. 1988; Nakamura 1988). On the other hand, Larson and Richards (1991) found higher rates of boredom at school among those with higher achievement test scores.

Unquestionably, school failure and achievement orientations are thought to play a significant role in the development of disengagement. Interestingly, both low and high achievement orientations can seemingly contribute. Finn's (1989) participation–identification model is suggestive of the negative influence of a history of school failure on engagement. On the other hand, a strong or ambitious attitude towards achievement may exert a negative influence on engagement. Due to increasingly large numbers of students who aspire for professional careers, pressure for admissions to good colleges and universities has intensified among the current generations of adolescents (Schneider and Stevenson 1999). In the early 1990s, only about half of high school students expected to go to college or go into professional jobs; today, almost all adolescents expect to go to college, and the vast majority have aspirations for professional jobs. With competition for college entrance intensifying, students are more likely to defer involvement in their true areas of passion in order to devote all of their time and energy to the narrow pursuit of getting into college, including the imperative for good grades. Many students regard clubs and extracurricular activities as important, but mainly for getting into college.

An educational climate emphasizing testing and evaluation would be expected to foster achievement orientations having a negative influence on students' emotions and engagement. High stakes testing is thought to encourage "teaching to the test" as opposed to "the whole child," thereby crowding out the curriculum to the neglect

of a broader liberal arts education and a greater diversity of skills (Finn and Ravitch 2007; Kohn 1999). In addition, Damon (2008) has recently argued that educational environments emphasizing testing and achievement draws attention away from, and squeezes out time for, other areas of meaningful activity supporting lifelong engagement and learning.

Finn's (1989) participation–identification model suggests that a history of school failure is a key factor in a continuing cycle of disengagement often culminating in dropout. Thus, for some youth, chronic disengagement and school failure may be rooted in the lack of a reasonable chance to succeed. Students' beliefs about what they can accomplish are shaped, at least in part, by prior levels of success (Bandura 1997). In addition to one's expectancy for future success, the value one places on schooling may be strongly influenced by prior performance (Wigfield and Eccles 2000). In fact, Eccles and colleagues (Eccles et al. 1993) have argued that middle schools and high schools are poorly matched to meet many motivational and developmental needs, and this may be particularly true in terms of the expectancy and value orientations necessary for a healthy motivational orientation. Glasser (1975) has argued that failure is built in to traditional schools for a substantial number of students who consistently score towards the bottom of the achievement distribution, thus undermining both expectancy and value motivational components. In the current educational system, we believe that students should not be shielded from failure, but rather that they must learn to respond to failure with increased effort and better strategy use. While this is ecologically adaptive, we must also consider if it is really true that *all* students would succeed with high effort and effective strategy use, or if success is at least partially defined by others failing.

As has been a theme throughout the early chapters in the book and established by a growing line of corroborative, contemporary research (e.g., Amabile 1996; Csikszentmihalyi et al. 1993; Harackiewicz et al. 2000; Ryan and Deci 2000; Shernoff and Hoogstra 2001), when people learn and enjoy a subject or activity, they will spend more time engaging with it and their skills will increase. An emphasis mainly on the evaluation of achievement in core subjects not only detracts from these motives but also sabotages all more enlightened aims for education—those serving motivation, well-being, and a sense of youth purpose beyond one's personal preservation and success.

Individualistic Values and Well-Being

Success! Achievement! Results! It rings like freedom from the Liberty Bell. The pursuit of success is what we have come to use our freedom for.

When students—or individuals in general—spend most of their time trying to achieve and get ahead, the lost opportunities for enjoyable and satisfying experiences in other domains work against the gratification of basic psychological needs. Thus, you might say that the real costs are *opportunity costs.* Because human growth, or lack thereof, eventually becomes perpetuated through the generations,

Csikszentmihalyi (1990) asserted, "One way or another, if human evolution is to go on, we shall have to learn to enjoy life more thoroughly." How well are we doing on that score? Although Americans make twice as much income in "real dollars" (i.e., adjusted for inflation) since 1957, the average level of happiness has not meaningfully risen, and the percentage of people saying that they are very happy has actually declined during that same time. Building on Maslow's (1954) theory suggesting that the pinnacle of human development is self-actualization, Csikszentmihalyi's theory regarding complexity (Csikszentmihalyi 1993; Csikszentmihalyi and Rathunde 1998) suggests not only that learning is biologically adaptive in the tradition of Piaget and other constructivists, but, moreover, that humans are fundamentally motivated by growth itself. In support of this contention, research has shown that those who pursue outward "success" goals like wealth, fame, and physical attractiveness report lower psychological well-being in terms of self-actualization and vitality, and higher levels of anxiety and depression, than those who pursue "intrinsic" or personal growth values (Kasser 1994; Kasser and Ryan 1993).

Prioritizing one's life in a way to pursue mainly external, individualistic goals like good grades and test results, even if reaching them, generally does not satisfy psychological needs. The nutritional metaphor might be junk food, in the sense that it may provide intense, immediate gratification, but it is generally short-lived rather than fortifying in the longer term. When self-esteem is contingent on external results, it becomes dependent on the whims of fortune and fate, as external results are rarely entirely in one's control. A more secure, stable, and deep sense of self-esteem emerges from the satisfaction of reaching internal goals.

It isn't easy to "keep up with the Joneses," and a great deal of energy can be wasted on that relatively futile pursuit. Individuals with inflated ideals of success are likely to become disappointed when falling short of those ideals relative to others in their own self-assessment. Materialistic values or those extolling fame and ideal body image are perpetuated by images running rampant in the popular media. Unfortunately, those images are often interpreted by young people as evidence of their own shortcomings (Kasser 2002). Seeing others rewarded not for their success, but *by their success*, reinforces and intensifies the competitive chase for success as the primary goal on which one would spend his or her freedom. When success is finally reached, the temporary feeling of gratification soon gives way to the realization that one's definition of success is relative. Now one may be satisfied only by higher and higher levels of success. Thus, there is a spoiling effect that occurs. Granted, this effect is more cut and dried when it comes to materialistic goals. Overall, transcending higher and higher levels of personal growth goals is likely to lead to deep satisfaction and contentment; competitive goals proving superiority over others are more tenuous as the individual is in less control; and there can be a fine line between the two.

An emphasis on competition can also lead to a relative lack of connectedness. With increasingly higher levels of "success," there's truth to the saying, "it's lonely at the top," and accomplishment can be accompanied by alienation, self-consciousness, and the objectification of others. The system of grading in the public schools, which is generally normative, curve-style grading, unfortunately but in a

very real sense, turns classmates into competitors. Even teachers who say they do not grade on a curve really do (even if not realizing it), by basing their grades on the comparative distribution of performances within the class. When there is a scarcity of top grades and associated rewards, such that the success of some comes only with the failure of others, then students may be good-spirited and collegial by nature, but on some level they of course realize that they are also obstacles to each others' success (Kohn 1998). Of course, this way of relating to others works against psychological well-being. When experiences and events are approached only as instrumental towards larger ends of external success, it is difficult for the person to become transformed by them – that is, to learn or grow from them at all. As Csikszentmihalyi sometimes put it, one's sense of interest in the world can atrophy (various writings and personal communications).

Evidence suggests that the relative values for success are propagated and thus transmitted through the generations by parents as well as schools. For example, Kasser and colleagues (1995) found that among mothers who rated financial success values more important than self-acceptance values, 71 % of their teenaged children responded the same way; conversely, among mothers who preferred self-acceptance values, 63 % of their teens did as well. The influence of parents' competitive values can manifest in very real school behaviors, such as children choosing easy classes specifically to do as well as possible as opposed to learning new things. Beliefs, practices, and other scripts that direct action that are transmitted through the generations are known as *memes*. Values, and particularly those emphasizing or deemphasizing competitiveness, may be particularly salient memes susceptible to intergenerational transmission (Nakamura and Shernoff 2009). Memes act as scripts for action for new generations, because they direct how progeny direct their time and attention, prioritize their goals, and target their actions. In keeping with those who suggest that moral engagement might be an explicit educational aim, frank discussions with children and adolescence about different conceptions of success could be of maximum benefit to the newer generations.

Schooling in a Culture of Competition

As Kohn (1999) has observed, children infected by a competitive value system are unlikely to get swept away with writing a poem, building a telescope, or investigating why there is always fighting in the Middle East. Ironically, a highly ambitious attitude and behavioral pattern towards achievement can interfere with authentic engagement in the learning process. For many students, the imperative or pressure to achieve detracts from authentic interest. High-achieving students looked stellar on paper in Pope's (2001) ethnographic case studies of them; but meanwhile, their drive to achieve in school exacted a psychological toll on their disposition towards learning, degenerating into academic dishonesty for several youth. In a recent study of 1,669 high school students in three top-performing schools in the Bay area,

Conner and Pope (2014) found that two-thirds of the sample was high on behavioral measures of engagement, but only one-third exhibited a deeper emotional and cognitive engagement with learning. The "behaviorally engaged only" group mirrored the students in Pope's earlier (2001) study of high-achieving students who were merely "doing school": they reported higher levels of internalizing and externalizing symptoms, experiencing higher academic stress and anxiety.

As Noddings points out in her (2003) book on happiness in education, the typical American is virtually in a constant state of competition. As early as high school, kids compete to get into college. Once in college, they compete with their classmates for top grades and rankings. They can look forward to the prospects of a good job, where, if they are fortunate, they can outperform their coworkers for promotions on the way to an early retirement. Perhaps then, in old age, their reward will be to finally relax, stop competing, and enjoy life. We tell students to "do their best," and then give many a "C" for doing their best. Even if all students did their best, there would still be plenty of C's and D's, because there would always be a bottom end of a bell-shaped curve, needed to provide variation within a grade distribution. Without variation (as if all students earned the same grade), grades would cease to have meaning as a tool for comparison, and most teachers are reluctant to assign grades that do not in some sense fit the distribution of performance in the class. When educators deviate from using a normal, bell-shaped distribution, as when awarding more A's than would be expected, even if they are all deserved, they are accused of grade inflation rather than helping more children to develop the effort and competency necessary to succeed. The unfortunate truth is that if everyone succeeds, then schools no longer serve its all important sorting function.

It has been argued that the nature of standardized evaluations creates a culture of schooling that frequently demoralizes rather than inspires, undermining both engagement and meaningful forms of learning (Kohn 2000). A great deal of research on intrinsic vs. extrinsic motivation suggests that the emphasis on performance versus the process of learning or creating detracts from interest; reduces one's willingness to become challenged or take risks (even to ask questions); reduces the quality of learning, including conceptual understanding and creativity; and orients students towards concerns about how smart they are instead of the quality of their effort (Sansone and Harackiewicz 2000). When classes become unidimensional in what is evaluated based on a narrow set of criteria, students display failure-avoiding behavior such as withdrawing effort to protect their sense of self-worth, especially low-achieving students (Covington 1992; Rosenholtz and Rosenholtz 1981; Simpson 1981). When studies have asked students to identify ego-involving environments, almost all students report their academic classes as primarily ego-involving rather than task-involving; test-taking generally tops the list of ego-involving activities (Jagacinski 1992).

However, there is also a less recognized, grave consequence: it can make failure overwhelming. In addition to test anxiety that can transpire prior to and during testing (Zeidner 1991), Turner and Waugh (2007) have documented qualitative data of students with reactions of devastation upon receiving unfavorable test results. Shell-shocked by the prospects of failing the class, students become not only disengaged in learning but also experience a sense of shame and disassociation so

profound that they cannot recall a single thing the instructor said all class. One student who described their feelings at the time stated, for example, "Well, I thought I was basically a failure in the class" (p. 132). Another recalled, "I initially felt that this can*not* possibly be. I felt that my heart sank to my stomach and I broke out in a prickly kind of feeling …. (I felt) very prickly all over. I couldn't believe it" (p. 134). Speaking to the profound interruption with engagement and the learning process, a third recounted, "I don't remember the lecture, not at all. I know (the professor) did lecture, but I don't remember (the content)." When asked what she did remember thinking, she responded, "What am I going to do? What am I going to do? I can not fail this class" (p. 135).

Different kids will define failure in different ways. Failure for one kid may be a test score of a 41, while for another it is a 91 on the same test. If the student scoring 91 exhibits anxiety or depression, we may simply refer to her as a perfectionist and prescribe counseling. However, such a reaction would be part of the cultural tendency to ignore the big picture. In education, the big picture is the broader society in which schools are situated. The broader society provides not only the input (i.e., the students, with their psychological makeup) of schools but schools also serve society in its "output" (e.g., it's graduates, with their associated transcripts and rankings). Instead of blaming pervasive anxiety on this student's psychological makeup, with our tendency to conceptualize a "performance" or "ego" orientation as a student characteristic, we may instead realize that a systemic demand for high achievement led her to become debilitated. It should not escape us that depression, anxiety, and debilitation are the psychological opposites of flow: what Csikszentmihalyi has called *psychic entropy* or disorder in consciousness. While perceptions of failure may be relative, failure itself is a constant since the system is designed to ensure that the percentage of students representing the bottom of the bell curve do indeed fail. In the big picture, economists have long known that a certain percentage of unemployment is healthy and desirable in terms of macroeconomics, because it helps to maintain a labor surplus, keeping wages reasonably low for better profits by the employer. Thus, an educational system that sorts out a sizeable minority of systemic losers reflects the larger economic system in microcosm.

Several studies suggest that the more schools emphasize grades, tests, and honor rolls, the more likely it is that students will not only avoid challenge and authentic opportunities to learn, but they are also more likely to stay in bed, feign illness, and do whatever possible to avoid failure. And as with Pope's (2001) study, they may cheat (Anderman et al. 1998). In fact, two-thirds of all high school students state that they have cheated on a school test, and 90 % say they copied someone else's homework, within a single academic year (Steinberg et al. 1996). Students' agency to cheat is a product not only of academic engagement but also moral engagement, such as beliefs about the inherent fairness of school and ethical conduct given those circumstances (Thorkildsen et al. 2007). Moral engagement can manifest both in agency to cheat or to work hard. However, the development of communitarian values, as opposed to individualistic ones, helps students to resist the temptation to cheat, as well as to have a stronger agency to work hard in pursuit of deep, conceptual learning.

In order to continually exercise students' moral engagement, discussions about life goals and personal standards in the context of complex communities might be part of the manifest rather than only the hidden curriculum. Focusing on how individuals can be engaged to do their best work and morally engaged to be ethically responsible is the focus of Gardner, Csikszentmihalyi, and Damon's GoodWork project (http://www.goodworkproject.org/). *Good work* is considered to be work that is at once excellent, ethical, and engaging. Given the increasing mistrust in corporate, financial, and governmental institutions resulting from a seemingly endless stream of high-profile scandals exposing widespread corruption, we may rightly wonder if we want our future leaders to be only excellent in their work—only creative, original, innovative, and cutting-edge—or if it is increasingly important for that work also to be ethically accountable to the common good? If so, the education of moral engagement becomes and increasing educational imperative.

An analytic synthesis of research on this topic reveals that college grades predict >3 % of the variance in measures of occupational performance such as income, job satisfaction, and ratings of effective work (Samson et al. 1984). So what exactly are grades good for, and why are they so persistent? One answer is that they are good for sorting, but that the function of the sorting is more a matter of social reproduction (i.e., intergenerational maintenance of the socioeconomic status quo) than an effective meritocracy. As long as there are some traces and examples of a meritocracy, however rare, an illusion of it can endure. Because the illusion of a meritocracy allows for self-blame rather than blaming the system, the result of failure in psychological terms is unfortunately harsh.

Research suggests that some performance feedback enhances performance and thus the informational component of grades may be beneficial (e.g., Butler 1987; Butler and Nisan 1986; Sansone 1986; Senko and Harackiewicz 2005). Teachers are likely to see grades as a useful shorthand providing that informational or feedback function. However, research also suggests that feedback has negative motivational effects to the extent that it is normative and contingent, as are grades, as opposed to that based on competence criteria (Harackiewicz 1979). Could there, and should there, be an alternative to grades? One useful idea is competency-based rubrics and the use of performance assessments. For example, at Alverno College near Milwaukee, the curricula is organized into eight major life competencies (i.e., communication, analysis, problem solving, valuing, social interaction, developing a global perspective, citizenship, and aesthetic engagement) and their "assessment-as-learning" philosophy provides performance rubrics for each competency. Students regularly demonstrate their competencies to progress throughout the program, which means that most walk around campus with a videotape in their backpack, because what they can do is routinely videotaped as evidence of meeting various performance standards.

Even if schools figured out a manageable way to use performance- and/or competency-based criteria for evaluation and feedback, could we dispose of grades? The answer is not likely, not unless college admissions systems also changed. To a large extent, the grading system was historically driven by colleges and universities to provide a manageable admissions system for comparing masses of students on

the same scale. Efficiency and standardization were also the goals of the academic accounting system based on the Carnegie unit (Tyack and Tobin 1994), the required currency for college admissions set up by the leaders of elite American colleges. There is some evidence to suggest that the admissions policies of colleges and universities could actually go a long way in bringing change. During the 8-Year Study of the 1930s, approximately 300 participating colleges and universities set aside their traditional admissions requirements in order to allow for about 30 participating high schools to make system-wide changes including less reliance on grades and an organization around themes of importance to the students instead of the traditional subjects. The experimental students not only performed just as well or slightly better than nonparticipants in terms of their grades once in college, but also improved on a number of other indicators. Interestingly, the more participating high schools departed from their traditional grading systems, the better the experimental students did in college (Tyack and Tobin).

Is All Competition Bad for Engagement?

Is competition always a negative for engagement and motivation? Certainly most of the research literature suggests that the effect of competition on motivation to learn is negative (Stipek 1996). Deci (1996) discusses the effects of competition on intrinsic motivation as mainly a negative from a self-determination perspective due to the focus on an extrinsic goal that can be interpreted as controlling. For example, participants of one study who competed against each other were less likely to return to the activity by free choice than those who had not competed (Deci et al. 1981). On the other hand, the optimal motivational state of flow can be likened to a peak performance of sorts, the kind of performance that is frequently stimulated by intense competition, especially at high levels of skill or expertise (Csikszentmihalyi 1990). As every school child knows, the introduction of competition almost immediately increases its perceived importance (Harackiewicz and Sansone 1991); usually, it is not necessary to explain why the soccer game is important to the players. Thus, it is difficult to know if competition, or all competition, has only negative effects on engagement, or if it can be beneficial as well.

Research suggests that certain properties of competition make it more likely that the experience is beneficial for engagement and motivation. For example, when athletes measure their performance by personal standards instead of competitive ones, such as a running event in which the goal is for each runner to reach his or her own best time, then the presence of "competitors" may help each individual to reach a higher level of performance (Deutsch 1960 as cited in Zaleski 2009). Some researchers (e.g., Stanne et al. 1999) have gone as far as to classify "appropriate" (vs. inappropriate) competition as those having certain characteristics in addition to lowering the emphasis on winning, such as an equal matching of opponents with a reasonable chance to win, fair and straightforward rules, and the ability to gauge one's performance relative to an opponent.

Related to this last characteristic, the ability to gain immediate performance feedback through sports and competitions is undoubtedly one reason that they are commonly reported as flow activities. However, much of this performance feedback is inherent to the given sport or activity (e.g., hitting a tennis ball over the net and within the lines as feedback for a good hit, while hitting the ball out provides feedback of hitting too hard). Adding competitive components mainly assures that the winner(s) will experience elevated encouragement and corresponding boost in self-esteem at the expense of exaggerated discouragement and drop in self-esteem of the loser(s). Observing that competition contains both ego- and task-involving elements, Jagacinski (1992) makes the distinction that when competition is inherent to the activity, like car racing, it is likely to produce a task-involvement orientation; but when competition is imposed on top of the activity instrumentally, as with programs giving a prize for the "best" science project, it is likely to facilitate ego-involvement.

The Social Reproduction of Class Advantage as the Context for Schooling

Kohn (1998) tells an unfortunate story that poignantly illustrates the role that parents play in insisting that schools function as a sorting mechanism to maintain the status quo. He describes an episode of a principal in Oklahoma who wanted to give his teachers more autonomy to provide *all* students a reasonable chance to succeed and to learn from each other, by placing more emphasis on equity and cooperation than competitive modes of schooling. He ran into opposition primarily from upper-class parents who felt that education should be competitive, and that the schools their children attended should not spend a whole lot of time with the "have-nots." In other words, the parents with children with superior school status (by virtue of their superior performance) did not like the idea that the performance of other students could be raised to that of their own. Clearly, they were not concerned that all children learn, but they were *very* concerned that *their* children would have advantages over others in their learning. They believed in the power of education, but "only for my kid" (p. 85). Kohn cites an even more unfortunate example of this phenomenon along racial lines, including parents in Amherst, Massachusetts, who fought to preserve the status quo of the tracking system by keeping virtually every student of color out of the advanced classes. So much for Dewey's ideal that "what the best and wisest parents want for his own children, that must the community want for all its children" (Dewey 1943/1990, p. 7).

Scholars have argued explicitly that the educational arrangement in a capitalistic economy provide the well-to-do with disproportionate advantages while undermining similar opportunities for the working class. For example, Bowles and Gintis (1976) present data demonstrating that economic mobility (i.e., as independent of family background) has not measurably improved in the United States since World War I. They argue that the educational system has not changed the overall degree of inequality and repression for marginalized groups, but rather has perpetuated the

social relationships of economic life through a hierarchical system of integrating youth into the labor force. This claim aligns with the working assumption of revisionist historians, who see school systems as a historical outgrowth of capitalism, the rise of industry, and centralization (e.g., Katz 1968; Tyack 1974).

Bowles and Gintis (1976) data show that the number of years of schooling attained by an individual is strongly associated with parental socioeconomic status, a trend that has remained constant, at least in the period from 1926 to 1976. This suggests that "schooling for all," in terms of inclusion and equality, is very far from realization (Katznelson and Weir 1985). Impediments to these goals, they argue, include socio-historical, geographical, and political imbalances such as the creation of the ability to "purchase" residential communities and accompanying school districts that accompanied mass suburbanization in the 1970s and 1980s.

One may wonder if the United States is simply extreme in its preservation of large socioeconomic inequalities. In fact, there is fairly consistent evidence that the educational system serves as a mechanism for preserving class advantage in a variety of counties, including those in which class disparities are not as wide and the purchasing of educational advantage is not as evident as in the United States. For example, in Japan, 99 % of all Japanese children are enrolled in public elementary schools. In contrast with the United States, education in Japan is guided by national standards and a fixed curriculum, metropolitan areas are not segregated by income, and resources are allocated evenly among a large number of schools and administrative districts. Gateways to top universities are then protected by a strenuous examination system; in this and in a variety of ways, Japan approaches the ideal of a true meritocracy more so than many other countries (Rohlen 1983). Nevertheless, a close examination reveals that high schools representing the different tiers of the educational hierarchy have noticeable differences in their family backgrounds. For example, greater percentages of students in the higher echelons of the high school hierarchy came from small, stable families; had their own rooms; and were sent to tutoring schools. Increasing privatization of educational expenses in postwar Japan manifested both in the mushrooming of a network of private schools and the proliferation of "extra-school" schools, including juku (exam preparation schools). Beyond high school, over one-third of the successful applicants to the top-rated Tokyo University took the entrance exam twice, sitting out for at least 1 year of additional study as ronin while being financially supported by their families.

Here in the United States, the purchasing of private education and ability for children of upper class to dedicate themselves to schooling full time and therefore compete more strongly than children who need to support themselves are some of the most obvious forms of class advantage. But there are subtler forms of advantage as well. For example, as the job market tightened due to a recent recession, parents of wealthy college students pay significant service fees in order for their children to be placed in *unpaid* internships (Shih 2009). That is, upper classes could go to the extreme of paying to work if it offered the privilege of competitive advantage in the job market. In 2009, it was widely reported that the University of Illinois graduated 616 students whose applications received special attention as directed by the upper administration. Investigation showed that all 616 students came from just 22 high

schools in the North Shore and wealthy suburbs of Chicago where families were well-positioned and politically connected to elected officials and university trustees (Malone et al. 2009). Perhaps the United States provides extreme examples, with many pointing to blatant corruption. Even in a relative "meritocracy" like Japan, however, money appears increasingly significant to the purchasing of educational advantage.

Ethnographic studies have shown that children and adolescents of working-class parents also learn to socialize themselves in preparation for working-class jobs during their schooling—via social group identity formation—explaining why many youth having low prospects of significant socioeconomic mobility become oppositional to school authority figures (Willis 1981). With the skills and knowledge necessary for the types of jobs that their parents have reflecting their own future jobs, such youth experience schooling as virtually irrelevant to their lives other than as a social mirror of their place in society, and thus they voluntarily eliminate themselves from the system that does not serve their interests. Bowles and Gintis (1976) summarize their certainty that macroeconomics leads the educational system by stating "Were egalitarian education reformers to win spectacular victories – the social relationships of economic life would remain untouched – we can confidently predict that employers would quickly resort to other means of labeling and segmenting working people so as to fortify the structure of power and privilege within the capitalist enterprise" (p. 14). It is here that we begin to understand one important function of grades, honors, and competitive degrees, all of which may be rightly seen as a form of "academic capital," helping to explain their stubborn persistence and longevity.

In sum, the educational system has been viewed by revisionist historians as an instrument that preserves the existing economic conditions of capitalism by its hierarchical system of integrating raw human material into the labor force. Although a few may "make it," which is essential for preserving the illusion and false promise of a meritocracy, the whole class can never follow.

Hope or Despair: Reaching Versus Failing to Reach Individual Students

Can schools make a difference by virtue of their design? Metz (1986/2003) observed three magnet schools in an anonymous city in the Midwestern United States, two of which adapted innovative approaches to ameliorate many of these very problems of conventional education. One of the magnet schools she observed, however, closely resembled traditional public school model in which grades, social control, and social divisions were more predominant. Reinforced by grade levels, standardized tests and traditional grading systems, and implemented by teachers who seek to control rather than support individuals, achievement was the dominant modality for making social comparisons during developmental periods of formative social learning. Metz observed that identity formation, group rivalries, and exclusive social

orientations were socially constructed and intricately connected to the battle for status within competitive models, and that behavioral patterns in such schools are the direct response to society's values and priorities. Interestingly, she also observes that as a microcosm of the larger society, half of the children in this school necessarily fell in the lower half of academic rankings by definition, with a certain proportion sure to be branded failures.

The other two magnet schools she observed were a good deal more innovative, however, and took a more individualized approach to teaching and curriculum. Serving predominantly poor and working-class children, these schools observed adapted innovative curricular and technological structures to decrease competitiveness and provided an equality of status among both individuals and groups. The schools assumed that each student would enter with varying skills. By offering a variety of activities, the schools allowed students to demonstrate a range of strengths and skills with which to earn each other's respect; students did not perceive each other according to a unidimensional hierarchy of a single skill set. Students were also recognized for possessing varying degrees of different kinds of intelligence (Gardner 1983). Combating competitiveness and academic rankings, the schools based evaluation on individual progress rather than a group norm. One school, for example, included no grading system or numerical standards with which students could rank themselves, and progress was described in narrative form.

For this system to succeed, teachers often became reflective and discussed among themselves strategies for reaching individual students most effectively, especially those having academic difficulties. Teachers gave students' personal welfare a high priority and attempted to work with students as *whole persons.* The teaching of affective and social skills was high priority. By working with the same students for 3 years, teachers from one school came to recognize and appreciate that students enter school not only with varying skills but also with varying interests. Students were encouraged to become responsible for their own learning and were given more control over it. The group approach and de-emphasis on competition also allowed low achievers to improve their skills without the stigma and personal embarrassment of failure. As a result, low-income and low-achieving students were not oppositional, but rather spoke to their teachers in positive, trusting tones. Classes were not divided along the lines of race or ability, and there was little tension between groups.

Unfortunately, and somewhat supportive of Bowles and Gintis' (1976) assertion about the victories of progressive reformers, the innovative schools that Metz observed ran into resistance in the absence of corresponding changes in the outside community. That is, equality and democracy could not exist only in a microcosm. In at least one of the schools that Metz observed, and much like those reported by Kohn (1998), parents were not concerned with the primary mission of fostering group cooperation, so much as securing private advantages for their own children, often to the exclusion of those from other classes or races. The belief that schools can never change no matter how hard they try can lead to despair among educators. However, the models Metz observed suggest that change can be made internally. While it is most certainly true that the surrounding community is a vital context for that change, it is also true that schools can have a role or co-partnership in the transformation of the community.

Conclusion

Group differences in engagement have been found by gender as well as race and ethnicity, among other individual-level variables. ESM studies in particular have detected an "engagement–achievement paradox" in which students from low SES communities and African American students have reported higher levels of engagement in school despite underachieving relative to their peers. This may be attributed, in part, to the decline in engagement white students and those from high SES communities experience when in school compared to the home and public context. Research shows that the obsessive focus on achievement within a culture of competition can have deleterious effects on engagement and authentic interest in learning. Theories of social reproduction postulate that schools, especially their most competitive features, are mechanisms for reproducing class advantage from one generation to the next, thus stabilizing the socioeconomic status quo through time. However, research suggests that a focus on competitive success in school is frequently accompanied by an undermining of meaningful forms of engagement in learning.

References

Ainsworth-Darnell, J. W., & Downey, D. B. (1998). Assessing the oppositional culture explanation for racial/ethnic differences in school performance. *American Sociological Review, 63*(4), 536–553.

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*(3), 261–271. doi: 10.1037/0022-0663.84.3.261

Alexander, K. L., Entwisle, D. R., & Dauber, S. L. (1993). First-grade classroom behavior: Its short- and long-term consequences for school performance. *Child Development, 64*(3), 801–814.

Alexander, K. L., Entwisle, D. R., & Horsey, C. S. (1997). From first grade forward: Early foundations of high school dropout. *Sociology of Education, 70*(2), 87–107.

Amabile, T. (1996). *Creativity in context: Update to "the social psychology of creativity"*. Boulder: Westview Press.

Anderman, E. M., Griesinger, T., & Westerfield, G. (1998). Motivation and cheating during early adolescence. *Journal of Educational Psychology, 90*(1), 84–93.

Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools, 45*(5), 369–386.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.

Bassi, M., Steca, P., Delle Fave, A., & Caprara, G. V. (2007). Academic self-efficacy beliefs and quality of experience in learning. *Journal of Youth and Adolescence, 36*(3), 301–312.

Battistich, V., Solomon, D., Watson, M., & Schaps, E. (1997). Caring school communities. *Educational Psychologist, 32*(3), 137–151.

Bempechat, J., Shernoff, D. J., Li, J., Holloway, S. D., & Arendtsz, A. L. (2010, May). *Achievement beliefs and school engagement in low income adolescents: A mixed-methods study.* Paper presented at the annual meeting of the American Educational Research Association, Denver.

Blau, J. R. (2003). *Race in the schools: Perpetuating white dominance?* Boulder: Lynne Rienner.

Bowles, S., & Gintis, H. (1976). *Schooling in capitalist America: Educational reform and the contradictions of economic life*. New York: Basic Books.

Butler, R. (1987). Task-involving and ego-involving properties of evaluation: Effects of different feedback conditions on motivational perceptions, interest, and performance. *Journal of Educational Psychology, 79*(4), 474–482.

Butler, R., & Nisan, M. (1986). Effects of no feedback, task-related comments, and grades on intrinsic motivation and performance. *Journal of Educational Psychology, 78*(3), 210–216.

Carli, M., Delle Fave, A., & Massimini, F. (1988). The quality of experience in the flow channels: Comparison of Italian and U.S. students. In M. Csikszentmihalyi & I. S. Csikszentmihalyi (Eds.), *Optimal experience: Psychological studies of flow in consciousness* (pp. 288–318). New York: Cambridge University Press.

Condry, J. (1989). *The psychology of television*. Hillsdale: Erlbaum.

Connell, J. P., Spencer, M. B., & Aber, J. L. (1994). Educational risk and resilience in African-American youth: Context, self, action, and outcomes in school. *Child Development, 65*(2), 493–506.

Connell, J. P., Halpern-Felsher, B. L., Clifford, E., Crichlow, W., & Usinger, P. (1995). Hanging in there: Behavioral, psychological, and contextual factors affecting whether African-American adolescents stay in high school. *Journal of Adolescent Research, 10*(1), 41–63.

Conner, J., & Pope, D. (2014). Student Engagement in high performing schools: Relationships to mental and physical health. In D. J. Shernoff & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbook by Teachers College Record.

Cooper, H., & Dorr, N. (1995). Race comparisons on need for achievement: A meta-analytic alternative to Graham's narrative review. *Review of Educational Research, 65*(4), 483–508.

Covington, M. V. (1992). *Making the grade: A self-worth perspective on motivation and school reform*. Cambridge: Cambridge University Press.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Perennial.

Csikszentmihalyi, M. (1993). *The evolving self: A psychology for the third millennium* (1st ed.). New York: HarperCollins.

Csikszentmihalyi, M., & Rathunde, K. (1998). The development of the person: An experiential perspective on the ontogenesis of psychological complexity. In W. S. E. Damon & R. M. V. E. Lerner (Eds.), *Handbook of child psychology* (Theoretical models of human development 5th ed., Vol. 1, pp. 635–684). New York: Wiley.

Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1993). *Talented teenagers: The roots of success and failure*. New York: Cambridge University Press.

Damon, W. (2008). *The path to purpose: How young people find their calling in life*. New York: Free Press.

Deci, E. L. (1996). *Why we do what we do*. New York: Penguin.

Deci, E. L., Betley, G., Kahle, J., Abrams, L., & Porac, J. (1981). When trying to win: Competition and intrinsic motivation. *Personality and Social Psychology Bulletin, 7*, 79–83.

Deutsch, M. (1960). The effects of cooperation and competition upon group process. In D. Cartwright & A. Zander (Eds.), *Group dynamics* (pp. 552–576). Evanston: Row, Peterson & Company.

Dewey, J. (1943/1990). *The school and society and the child and the curriculum* (2nd ed.). Chicago: University of Chicago Press.

Diaz, J. D. (2005). School attachment among Latino youth in rural Minnesota. *Hispanic Journal of Behavioral Sciences, 27*, 300–318.

Downey, D. B., & Pribesh, S. (2004). When race matters: Teachers' evaluations of students' classroom behavior. *Sociology of Education, 77*(4), 267.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., et al. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *The American Psychologist, 48*(2), 90–101.

Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In N. Eisenberg (Ed.), *Handbook of child psychology* (Vol. 3, pp. 1017–1095). New York: Wiley.

Ehrenreich, B. (1990). *Fear of falling: The inner life of the middle class*. New York: HarperCollins.

Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*(2), 117–142.
Finn, J. D. (1993). *School engagement and students at risk* (p. 117). Washington, DC: National Center for Education Statistics.
Finn, J. D., & Cox, D. (1992). Participation and withdrawal among fourth-grade pupils. *American Educational Research Journal, 29*(1), 141–162.
Finn, C., & Ravitch, D. (Eds.). (2007). *Beyond the basics: Achieving a liberal education for all children*. Washington, DC: Thomas B. Fordham Foundation.
Finn, J. D., & Voelkl, K. E. (1993). School characteristics related to student engagement. *The Journal of Negro Education, 62*(3), 249–268.
Fordham, S., & Ogbu, J. U. (1986). Black students', school success: Coping with the "burden of 'acting white'". *Urban Review, 18*(3), 176–206.
Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59–109.
Froh, J. J., Kashdan, T. B., Yurkewicz, C., Fan, J., Allen, J., & Glowacki, J. (2010). The benefits of passion and absorption in activities: Engaged living in adolescents and its role in psychological well-being. *The Journal of Positive Psychology, 5*(4), 311–332.
Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
Glanville, J. L., & Wildhagen, T. (2007). The measurement of school engagement: Assessing dimensionality and measurement invariance across race and ethnicity. *Educational and Psychological Measurement, 67*(6), 1019–1041.
Glasser, W. (1975). *Schools without failure*. New York: Harper.
Graham, S. (1994). Motivation in African Americans. *Review of Educational Research, 64*(1), 55–117.
Harackiewicz, J. M. (1979). The effects of reward contingency and performance feedback on intrinsic motivation. *Journal of Personality and Social Psychology, 37*(8), 1352–1363.
Harackiewicz, J. M., & Sansone, C. (1991). Goals and intrinsic motivation: You can get there from here. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 7). Greenwich: JAI Press.
Harackiewicz, J. M., Barron, K. E., Tauer, J. M., Carter, S. M., & Elliot, A. J. (2000). Short-term and long-term consequences of achievement goals: Predicting interest and performance over time. *Journal of Educational Psychology, 92*(2), 316–330.
Hidi, S., & Anderson, V. (1992). Situational interest and its impact on reading and expository writing. In K. A. Renninger, S. Hid, & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 215–238). Hillsdale: Erlbaum.
Hunter, J. P., & Csikszentmihalyi, M. (2003). The positive psychology of interested adolescents. *Journal of Youth and Adolescence, 32*(1), 27–35.
Jagacinski, C. M. (1992). The effects of task involvement and ego involvement on achievement-related cognitions and behaviors. In D. H. Schunk & J. L. Meece (Eds.), *Student perceptions in the classroom* (pp. 307–326). Hillsdale: Erlbaum.
Johnson, M. K., Crosnoe, R., & Elder, G. H., Jr. (2001). Students' attachment and academic engagement: The role of race and ethnicity. *Sociology of Education, 74*(4), 318–340.
Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *The American Psychologist, 39*(4), 341–350.
Kao, G., & Tienda, M. (1998). Educational aspirations of minority youth. *American Journal of Education, 106*(3), 349–384.
Kasser, T. (1994). *Further dismantling the American dream: Correlates of intrinsic and extrinsic aspirations*. Rochester: University of Rochester.
Kasser, T. (2002). *The high price of materialism*. Cambridge, MA: MIT Press.
Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology, 65*(2), 410–422.
Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality & Social Psychology Bulletin, 22*(3), 280–287.
Kasser, T., Ryan, R. M., Zax, M., & Sameroff, A. J. (1995). The relations of maternal and social environments to late adolescents' materialistic and prosocial values. *Developmental Psychology, 31*(6), 907–914.

Katz, M. B. (1968). *The irony of early school reform*. Cambridge, MA: Harvard University Press.
Katznelson, I., & Weir, M. (1985). *Schooling for all: Class, race, and the decline of the democratic ideal*. Berkeley: University of California Press.
Kelly, S. (2008). Race, social class, and student engagement in middle school English classrooms. *Social Science Research, 37*(2), 434–448.
Kelly, S., & Price, H. (2014). Changing patterns of engagement in the transition to high school. In D. J. Shernoff & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbook by Teachers College Record.
Kogan, M., & Hanney, S. (2000). *Reforming higher education*. London: Jessica Kingsley.
Kohn, A. (1998). *What to look for in a classroom: And other essays* (1st ed.). San Francisco: Jossey-Bass.
Kohn, A. (1999). *The schools our children deserve: Moving beyond traditional classrooms and "tougher standards"*. Boston: Houghton Mifflin Company.
Kohn, A. (2000). *The case against standardized testing: Raising the scores, ruining the schools*. Portsmouth: Heinemann.
Larson, S. (2010). *The effects of academic literacy instruction on engagement and conceptual understanding of biology in ninth grade students*. Unpublished doctoral dissertation, Aurora University, Aurora.
Larson, R. W., & Richards, M. H. (1991). Boredom in the middle school years: Blaming schools versus blaming students. *American Journal of Education, 99*, 418–443.
Lee, V. E., & Smith, J. B. (1993). Effects of school restructuring on the achievement and engagement of middle-grade students. *Sociology of Education, 66*(3), 164–187.
Lee, V. E., & Smith, J. B. (1995). Effects of high school restructuring and size on early gains in achievement and engagement for early secondary school students. *Sociology of Education, 68*(4), 241–270.
Li, Y., Phelps, E., Lerner, J. V., & Lerner, R. M (2009, April). *Educational expectations and academic achievement in adolescence: The mediating role of school engagement and intentional self-regulation*. Paper presented at the biennial meeting of the Society for Research in Child Development, Denver.
Li, Y., Bebiroglu, N., Phelps, E., Lerner, R. M., & Lerner, J. V. (in press). Out-of-school time activity participation, school engagement, and positive youth development: Findings from the 4-H study of positive youth development. *Journal of Youth Development*.
Lindstrom, L., Ulriksson, L., Arnegard, J., & Brenner, S.-O. (2005). *Experience and achievement in secondary schools: An experience sampling method and interview study* (pp. 46). Stockholm.
Luthar, S. S. (2003). The culture of affluence: Psychological costs of material wealth. *Child Development, 74*(6), 1581–1593.
Luthar, S. S., & Becker, B. E. (2002). Privileged but pressured? A study of affluent youth. *Child Development, 73*(5), 1593–1610.
Luthar, S. S., & D'Avanzo, K. (1999). Contextual factors in substance use: A study of suburban and inner-city adolescents. *Development and Psychopathology, 11*(4), 845–867.
Malone, T., Little, D., & Cohen, J. S. (2009, July 17). Who had clout? Kids at affluent high schools. *Chicago Tribune,* 1.
Marks, H. M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle and high school years. *American Educational Research Journal, 37*(1), 153–184.
Martin, A. J. (2007). Examining a multidimensional model of student motivation and engagement using a construct validation approach. *British Journal of Educational Psychology, 77*(2), 413–440.
Maslow, A. (1954). *Motivation and personality*. New York: Harper and Row.
Metz, M. H. (1986/2003). *Different by design. The context and character of three magnet schools*. New York: Teachers College Press.
Mickelson, R. A. (1990). The attitude-achievement paradox among black adolescents. *Sociology of Education, 63*(1), 44–61.
Mitchell, M. (1993). Situational interest: Its multifaceted structure in the secondary school mathematics classroom. *Journal of Educational Psychology, 85*(3), 424–436.

Nakamura, J. (1988). Optimal experience and the uses of talent. In M. Csikszentmihalyi & I. S. Csikszentmihalyi (Eds.), *Optimal experience: Psychological studies of flow in consciousness* (pp. 319–326). New York: Cambridge University Press.

Nakamura, J., & Shernoff, D. J. (2009). *Good mentoring: Fostering excellent practice in higher education*. San Francisco: Jossey-Bass.

National Center for Education Statistics. (2000). *Dropout rates in the United States: 1999*. Washington, DC: U.S. Government Printing Office.

Newmann, F. M., Wehlage, G. G., & Lamborn, S. D. (1992). The significance and sources of student engagement. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 11–39). New York: Teachers College Press.

Noddings, N. (2003). *Happiness and education*. Cambridge: Cambridge University Press.

Nystrand, M., & Gamoran, A. (1991). Instructional discourse, student engagement, and literature achievement. *Research in the Teaching of English, 25*(3), 261–290.

Ogbu, J. U. (1978). *Minority education and caste: The American system in cross-cultural perspective* (p. 431). New York: Academic.

Park, S., Holloway, S. D., Arendtsz, A., Bempechat, J., & Li, J. (2010). *Predicting emotional engagement in academic tasks among low-income youth*. Berkeley: University of California.

Pope, D. C. (2001). *Doing school: How we are creating a generation of stressed-out, materialistic, and miseducated students*. New Haven: Yale University Press.

Rohlen, T. P. (1983). *Japan's high schools*. Berkeley: University of California Press.

Rosenholtz, S. J., & Rosenholtz, S. H. (1981). Classroom organization and the perception of ability. *Sociology of Education, 54*, 132–140.

Rotermund, S. (2008, April). *Student engagement and achievement in high school: A structural equation model using data from the education longitudinal study of 2002 (ELS 2002).* Paper presented at the annual meeting of the American Educational Research Association, New York.

Rothstein, R. (2004). The achievement gap: A broader picture. *Educational Leadership, 62*(3), 40–43.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist, 55*(1), 68–78.

Samson, G. E., Graue, E. M., Weinstein, T., & Walberg, H. J. (1984). Academic and occupational performance: A quantitative synthesis. *American Educational Research Journal, 21*(2), 311–321.

Sansone, C. (1986). A question of competence: The effects of competence and task feedback on intrinsic interest. *Journal of Personality and Social Psychology, 51*(5), 918–931.

Sansone, C., & Harackiewicz, J. M. (2000). *Intrinsic and extrinsic motivation: The search for optimal motivation and performance*. San Diego: Academic.

Schmidt, J. A., Shernoff, D. J., & Csikszentmihalyi, M. (2007). Individual and situational factors related to the experience of flow in adolescence: A multilevel approach. In A. D. Ong & M. von Dulmen (Eds.), *The handbook of methods in positive psychology* (pp. 542–558). Oxford: Oxford University Press.

Schneider, B. L., & Stevenson, D. (1999). *The ambitious generation: America's teenagers, motivated but directionless*. New Haven: Yale University Press.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (Eds.). (2008). *Motivation in education: Theory, research, and applications* (3rd ed.). Upper Saddle River, NJ: Merril Prentice Hall.

Schwartz, B. (2004). *The paradox of choice: Why more is less*. New York: HarperCollins.

Senko, C., & Harackiewicz, J. M. (2005). Regulation of achievement goals: The role of competence feedback. *Journal of Educational Psychology, 97*(3), 320–336.

Shernoff, D. J. (2010). *The experience of student engagement in high school classrooms: Influences and effects on long-term outcomes*. Saarbruken: Lambert Academic Publishing.

Shernoff, D. J., & Csikszentmihalyi, M. (2000, April). *Comparing experiences of school and family across socioeconomic background*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Shernoff, D. J., & Csikszentmihalyi, M. (2009). Flow in schools: Cultivating engaged learners and optimal learning environments. In R. C. Gilman, E. S. Heubner, & M. J. Furlong (Eds.), *Handbook of positive psychology in schools* (pp. 131–145). New York: Routledge.

Shernoff, D. J., & Hoogstra, L. (2001). Continuing motivation beyond the high school classroom. *New Directions for Child and Adolescent Development, 93*, 73–87.

Shernoff, D. J., & Schmidt, J. A. (2008). Further evidence of an engagement–achievement paradox among U.S. High school students. *Journal of Youth and Adolescence, 37*(5), 564–580.

Shernoff, D. J., Knauth, S., & Makris, E. (2000). The quality of classroom experiences. In M. Csikszentmihalyi & B. Schneider (Eds.), *Becoming adult: How teenagers prepare for the world of work* (pp. 141–164). New York: Basic Books.

Shih, G. (2009, August 9). Unpaid work, but they pay for privilege. *The New York Times,* 1 & 18.

Simpson, C. (1981). Classroom structure and the organization of ability. *Sociology of Education, 54*, 120–132.

Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research 1990–2000. *Review of Educational Research, 75*(3), 417–453.

Sirin, S. R., & Rogers-Sirin, L. (2004). Exploring school engagement of middle-class African American adolescents. *Youth & Society, 35*(3), 323–340.

Sirin, S. R., & Rogers-Sirin, L. (2005). Components of school engagement among African American adolescents. *Applied Developmental Science, 9*(1), 5–13.

Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I've got it: A process model of perceived control and children's engagement and achievement in school. *Journal of Educational Psychology, 82*(1), 22–32.

Smerdon, B. A. (1999). Engagement and achievement: Differences between African-American and White high school students. *Research in Sociology of Education and Socialization, 12*, 103–134.

Stanne, M. B., Johnson, D. W., & Johnson, R. T. (1999). Does competition enhance or inhibit motor performance: A meta-analysis. *Psychological Bulletin, 125*(1), 133–154.

Steinberg, L., Dornbusch, S. M., & Brown, B. B. (1992). Ethnic differences in adolescent achievement: An ecological perspective. *The American Psychologist, 47*(6), 723–729.

Steinberg, L., Brown, B. B., & Dornbusch, S. M. (1996). *Beyond the classroom: Why school reform has failed and what parents need to do*. New York: Simon & Schuster.

Stipek, D. J. (1996). Motivation and instruction. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 85–113). New York: Simon & Schuster Macmillan.

Stipek, D. J. (2002). *Motivation to learn* (4th ed.). Boston: Allyn & Bacon.

Striegel-Moore, R. H., Silberstein, L. R., & Rodin, J. (1993). The social self in Bulimia Nervosa: Public self-consciousness, social anxiety, and perceived fraudulence. *Journal of Abnormal Psychology, 102*(2), 297–303.

Thorkildsen, T. A., Golant, C. J., & Richesin, L. D. (2007). Reaping what we sow: Cheating as a mechanism of moral engagement. In E. M. Anderman & T. B. Murdock (Eds.), *Psychology of academic cheating* (pp. 141–172). San Diego: Elsevier Academic.

Turner, J. E., & Waugh, R. M. (2007). A dynamical systems perspective regarding students' learning processes: Shame reactions and emergent self-organizations. In P. A. Schutz & R. Pekrun (Eds.), *Emotion in education* (pp. 125–145). Burlington: Elsevier.

Tyack, D. B. (1974). *The one best system*. Cambridge, MA: Harvard University Press.

Tyack, D. B., & Tobin, W. (1994). The "grammar" of schooling: Why has it been so hard to change? *American Educational Research Journal, 31*(3), 453–479.

Uekawa, K., Borman, K., & Lee, R. (2007). Student engagement in U.S. urban high school mathematics and science classrooms: Findings on social organization, race, and ethnicity. *The Urban Review, 39*(1), 1–43.

Ulriksson, L., Lindstrom, L., & Brenner, S.-O. (n.d.). *Engagement and achievement among students in the Swedish secondary school.* Stockholm.

van Laar, C. (2000). The paradox of low academic achievement but high self-esteem in African American students: An attributional account. *Educational Psychology Review, 12*(1), 33–60.

Vandell, D. L., Shernoff, D. J., Pierce, K. M., Bolt, D. M., Dadisman, K., & Brown, B. B. (2005). Activities, engagement, and emotion in after-school programs (and elsewhere). *New Directions for Youth Development, 105*, 121–129.

Vandell, D. L., Pierce, K. M., Brown, B. B., Lee, D., Bolt, D. M., Dadisman, K, et al. (2009, April). *A multi-site study of promising after-school programs.* Paper presented at the annual meeting of the American Educational Research Association, San Diego.

Voelkl, K. E. (1997). Identification with school. *American Journal of Education, 105*(3), 294–318.

Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology, 25*(1), 68–81.

Willis, P. E. (1981). *Learning to labor: How working class kids get working class jobs*. New York: Columbia University Press.

Willms, J. D. (2003). *Student engagement at school: A sense of belonging and participation: Results from PISA 2000*. Paris: Organisation for Economic Co-operation and Development.

Yair, G. (2000). Educational battlefields in America: The tug-of-war over students' engagement with instruction. *Sociology of Education, 73*, 247–269.

Yazzie-Mintz, E. (2007). *Voices of students on engagement: A report on the 2006 High School Survey of Student Engagement* (p. 12). Bloomington: Center for Evaluation & Education Policy.

Yazzie-Mintz, E. (2010). *Charting the path from engagement to achievement: A report of the 2009 High School Survey of Student Engagement*. Bloomington: Center for Evaluation & Education Policy.

Zaleski, D. (2009). *The effects of competition and cooperation: An independent study* (pp. 15). DeKalb.

Zeidner, M. (1991). Test anxiety in educational contexts: Concepts, findings, and future directions. In P. A. Schutz & R. Pekrun (Eds.), *Emotion in education* (pp. 165–184). Burlington: Elsevier.

Chapter 6
Connecting to "The How" of Classroom Engagement: Instruction and Optimal Learning Environments

Introduction

The Experience Sampling Method provides a window into instructional formats, classroom activities, and school subjects that students find more engaging and less engaging, as discussed in Chap. 4. The ESM was not devised primarily to study classrooms and engagement in learning, however, but rather optimal experiences in the course of day-to-day life. Thus, early ESM studies in the classroom can leave much to be desired in terms of the greatest sources of influence on student engagement. For example, although we know that engagement is greatly influenced by the teacher (Pianta and Hamre 2009; Reeve 2009; Turner and Warzon 2009), we still did not know the impact of specific instructional decisions made by the teacher in ESM studies. This chapter discusses several studies designed to extend ESM studies of classroom learning through combining the ESM with video techniques. These studies suggested that the overall learning environment may be the most salient variable influencing engagement, giving rise to systematic ways to study the impact of the classroom learning environment on engagement as presented in this chapter.

Teaching, Learning, and the Learning Environment

Educational debates are so focused on standards, testing, and achievement that they have largely neglected the business of how teachers teach and its relationship to what and how students learn (Stigler and Hiebert 1999). These topics are the province of educational psychologists and those in related fields. From the start, however, the focus of educational psychologists and related professionals may have been misplaced at least where there is hope to affect educational practice. Almost all of the research in the last century in teaching and learning conceptualizes learning as a property of the individual learner, as summarized by the APA learner-centered principles (American Psychological Association 1997), which crystallizes

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psychology research findings from psychology and cognitive sciences in terms of their educational implications. Together, the principles suggest that cognitive, developmental, motivational, and social factors of the individual learner have been found to influence learning, which has a strong and long-standing empirical basis.

However, features of the immediate learning environment, especially if conceived as a nexus of historical cultural, social, and more proximal influences, may be an even greater factor in the propensity to engage in learning than characteristics of the individual. Through a combination of ESM and multilevel modeling techniques in an earlier study (Shernoff 2010), we demonstrated that only 25 % of the variation in student engagement in learning existed between individuals, potentially explainable by cultural/ethnic, community, peer, or family concerns. In contrast, a full 75 % of the variation fluctuated by the situation or learning environment, as students moved from one learning context to another. Obviously, the design and implementation of learning environments is the primary role of instruction, and thus, as important as individual characteristics are, as educators, we influence them only by force of changing or influencing the environment. Furthermore, contemporary research and theory also suggests that both tacit and explicit forms of learning—with motivation and engagement being among the most important things that is tacitly learned—are embedded in human relationships and the quality of those relationships (Nakamura and Shernoff 2009; Nonaka and Takeuchi 1995). Therefore, understanding the individual learner is extremely important, but it is only the first step in beginning to understand how *educational environments* shape the learning processes of those learners.

One reason that we have gotten such a late start into investigating the area that is most central to shaping engagement in learning—that is, characteristics of learning environments as opposed to only of individuals—is that research in educational psychology grew out of *psychology,* in the tradition of Freud. Ever since, we have striven to understand teaching and learning as something that occurs inside the learner's mind. As a result, researchers and educational practitioners truly live in two separate worlds. An interesting question to begin changing the operative paradigm is not "what is learning?" but "where is learning?" Vygotsky (1978) and others helped us to understand that learning is a transactional process, which is to say, a process of engagement: something that exists *in the interaction* between a person and a learning environment, most especially including meaningful others. Much of contemporary educational psychology has largely followed in this constructivist tradition, highlighting the transactional nature of learning within authentic contexts and learning communities (A. L. Brown and Campione 1994; Brown et al. 1989; Paavola et al. 2004; Palincsar and Herrenkohl 1999; Rogoff 1990, 1995, 2003; Scardamalia 1989; Zhang et al. 2009), and yet research methods largely lag behind, dominated by surveys to tap individual constructs rather than the characteristics of relationships and interactions that characterize learning environments.

Proof of this division between researchers and practitioners is the fact that classroom teachers have rarely made primary use of this research and when looking for help to improve their practice. Teachers tend to read books more popular among practitioners than educational psychologists and researchers. While researchers

might be worried that some of these books are not as "evidence based" as some others, teachers use these books because they describe the educational environment and what teachers must do to prepare for it. They use what "works" for them. If it works for their own classrooms in actual practice, that's all the data they need. In fact, a larger data set or more general findings would be consumed only for the ultimate purpose of their classroom implementation, so the evidence from their own classroom usually trumps other forms of evidence in the mind of the teacher. Many ASCD books, for example, help teachers to prepare for their instruction and the learning environment they would like to create. Of course, teachers strive to understand students as individual psychological beings, and there is no doubt that the more teachers come to know, understand, and support their students as individuals, the more effective they are. However, it is simply not practical or the best use of their resources for this to be the forefront of their daily preparation in comparison with how to set up a learning environment that has the best chance to meet the learning and developmental needs of all of their students. This latter strategy targets the same goal with a different approach.

What is or can be the instructors' role in creating an engaging learning environment? We explore that question next.

The Instructor's Role in Promoting Engagement: Supporting and Challenging

Schools have been observed to contain remarkable degrees of excitement and activity. Hallways, lunch areas, and after-school programs brim with energy; intense interactions characteristic of flow are exhibited during sports, extracurricular, and even nonacademic classes—but that's rarely the case in classrooms (Shinn and Yoshikawa 2008). Only when a student enters the classroom does energy decline, and it is rare that a student connects with the material in such a way that they reach high levels of flow or engagement or perform at a high level (Shernoff 2010; Shernoff and Csikszentmihalyi 2009).

Therefore, it is critical to identify the fundamental elements of engaging instruction—that is, what good teachers do to effectively engage students that generalizes to a variety of instructional settings. The literature suggests that a variety of practices that are supportive of student motivation have also been found to increase student engagement, including cooperative learning techniques, providing students with choices and autonomy and one-to-one attention, making connections between home and school, providing opportunities to make deep personal connections, encouraging creativity, and creating real-world interactions (Dolezal et al. 2003; Guthrie et al. 1999; Guthrie et al. 2000; Schunk et al. 2008; Skinner and Belmont 1993; Skinner et al. 2008).

As emphasized in the conceptual model discussed at the end of Chap. 4, a consistent finding is that students frequently report experiencing a high level of

academic intensity (e.g., high level of concentration in challenging and important activities), but little enjoyment, or they report just the opposite: a very *positive emotional response* (e.g., level of enjoyment, positive affect, and intrinsic motivation), but low academic intensity. Combining both aspects of experience, which was observed in rare instances of group work during academic classes, but more commonly in nonacademic classes and after-school programs (Shernoff et al. 2003; Vandell et al. 2005), is key for facilitating *meaningful engagement* (Shernoff and Csikszentmihalyi 2009). However, how can teachers accomplish this?

Research suggests that teachers facilitate the positive emotions of their students by modeling their own enthusiasm and also by *providing support* for their students and their needs (Lutz et al. 2006; Meyer and Turner 2007; Patrick et al. 2003; Reeve 2009; Reeve and Jang 2006; Reeve et al. 2004). This is done by providing choice, affirming students' abilities, scaffolding, expressing care, and otherwise providing a positive encouragement. Teachers foster academic intensity by holding high expectations for critical thinking and rigorous work, and *challenging* students to reach and meet them. A fairly consistent finding throughout the engagement literature is that students are disengaged when both unsupported and unchallenged and that teachers who positively engage students combine these features by supporting students (i.e., emotionally, interpersonally) *to* meet the challenge of high-level thinking or completing high-quality work (Shernoff, Tonks, Anderson and Dortch 2011).

A variety of studies of engagement utilizing detailed classroom observations have been remarkably consistent in revealing that a combination of academic challenge and emotional support provided by the instructor can be particularly engaging for students (Dolezal et al. 2003; Lutz et al. 2006; Skinner and Belmont 1993; Turner and Meyer 2004; Turner et al. 1998). Accordingly, optimally engaging teachers usually ask questions for higher-order conceptual understanding, combined with scaffolding, feedback, strategies, and encouragement to take risks in an emotionally supportive manner (Dolezal et al. 2003; Turner and Meyer 2004).

Engaging students in classrooms through the dynamic combination of challenge and support was also illustrated vividly in Turner and colleagues' (1998) study. By combining a modified version of the ESM with classroom observations, researchers examined the relationship between teachers' instructional discourse with students and involvement in mathematics instruction. Fifth and sixth grade students in seven mathematics classrooms completed questionnaires regarding their experience at the end of four or five class periods.

The extent of students' involvement was determined by the match between challenges and skills based on the flow paradigm. Consistent with flow theory, students in high-involvement classrooms reported feeling more intrinsically motivated, open, and relaxed than those from low-involvement classrooms. The researchers also observed differences in instructional interactions between high- and low-involvement classrooms. Teachers in high-involvement classrooms fostered intrinsic motivation and utilized more scaffolded instruction (e.g., modeling thinking, providing hints, asking students to explain, and giving feedback about progress) to adjust the challenge of the material to students' level of skill, as well as more motivational discourse. Instructional scaffolding included modeling thinking, providing hints,

asking students to explain, and giving feedback about progress. Examples of motivational discourse included encouraging students, treating mistakes as opportunities, reducing anxiety, and emphasizing joint responsibility among teacher and students. Scaffolded instruction and motivational discourse were particularly facilitative of participation and engagement for low achievers; all students are encouraged to develop their thinking and demonstrate their arguments when a variety of ideas are honored and encouraged (Kelly and Turner 2009).

Teachers of high-involvement classrooms also directed more attention than those in low-involvement classrooms to helping students reach understanding and become autonomous learners, giving them more opportunities to demonstrate their expertise and domain competence. Teachers in low-involvement classes tended to emphasize procedures and used extrinsic incentives with higher frequency. Turner and Meyer (2004) conclude from their studies that instruction providing both challenge and emotional support is necessary for promoting positive motivation. Their prescription supports our conceptual model of optimal learning environment as incorporating both academic intensity and support for positive emotions discussed at the end of Chap. 4. We will describe optimal learning environments in more detail in this chapter and Chap. 7.

Engaging students in classrooms through the dynamic combination of challenge and support was also illustrated vividly in Skinner and Bellmont's (1993) study. Teacher involvement was found to be central, including a balance of autonomy support on the one hand and provisions for structure on the other. *Involvement* reflected a quality of the relationship between teacher and student, such that the teacher was attuned to and made time for the student and enjoyed their interactions. *Providing structure* included using the information in the environment to reach desired outcomes, communicating expectations, responding consistently and predictably, and adjusting teaching strategies to the level of the child. Teacher involvement and student engagement were found to be a reciprocal process, such that the more involvement, consistency, and autonomy support teachers provided to students, the more engaged they became, and higher student engagement in turn influenced higher teacher involvement. Overall, strong support was found for the reciprocal relationship between teacher behaviors and student engagement; consistent with motivational theory (Connell and Wellborn 1990; Deci and Ryan 1985), providing for students' basic psychological needs was the primary foundation under which motivation flourished.

Highlighting the importance of the support dimensions, the most highly engaging teachers of elementary school children were found to provide a good deal of encouragement and positive feedback as well as emotional scaffolding, taking advantage of teachable moments, showing their concern, and encouraging independence (Dolezal et al. 2003). Such teachers see themselves as playing the role of parents as much as educators, nourishing, shepherding, and safeguarding a child's emotional and spiritual development as well as academic development. Students report that their engagement is highly dependent on the perception that teachers care about them and enthusiastically present them with learning opportunities (Cothran and Ennis 2000).

Moving into the high school years, the challenge dimension also appears to be extremely important in its own right. As Sizer (1984) observed, students find little reason to put in more than minimal effort in traditional classroom settings. The teacher tends to do most of the talking, all of the planning, and only rarely is there controversy, so students merely go along with demands in exchange for not too much being asked of them. If they are barely noticed in classes devoid of tenor, passion, or intellectual stimulation, then why would they have to work very hard? Newmann and colleagues (1992) stressed the challenge dimension by emphasizing higher-order thinking in instruction and the expanded use of the mind. The teacher's role, in this paradigm, is to design, create, and invent authentic and intellectually challenging work for students so compelling that they persist and feel satisfaction and delight when they successfully accomplish the challenge (Schlechty 1997). The goal is to develop critical and creative thinkers by setting up questions that provoke, instill a sense of wonder, and otherwise stretch the mind of the student. Studies have shown that challenging and complex activities are primary factors related to students' interest and engagement in classrooms (Lutz et al. 2006; Newmann et al. 1992; Shernoff et al. 2003).

Unfortunately, however, higher-order thinking tends to be encouraged in student-teacher discourse only rarely (Newmann et al. 1992). Teachers' questions typically focus only on eliciting the correct response or common understanding, not on provoking a student's independent thought or analysis (Mehan 1979). This principle was aptly demonstrated in Gamoran and Nystrand's (1992) study which demonstrated that students had little reason to put forth more than minimal effort due to the kinds of questions teachers asked. Because the most common instructional format was *transmission of information,* controversies were avoided and discourse was usually devoid of passion. Instructors of more "authentic instruction," however, encouraged students to construct their own ideas (e.g., by asking, "What was your reaction to that?") and probed students responses to go into greater depth.

It goes without saying that a great deal of disengagement at all levels of education, perhaps in higher education most of all, stems from the seemingly endless stream of teacher talk. Thus, much of classroom disengagement might be cured if teachers attempted to do what they do without so much of their own talk—for example, by drawing the information from the students instead of spoon-feeding it to them. Teachers often appear to believe that talking equals teaching, but this is clearly not the case. While it is true that a great deal of what can be learned may be accomplished through speech and demonstration, the corollary is not true: that most of what is said in a steady stream of continuous talk is in fact learned.

What specific teacher practices served to challenge and support students? Teachers support and challenge students as individual learners by discovering their existing abilities and conceptions, and designing instruction to both support and challenge them. Consistent with learner-centered and constructivist approaches, the teacher can achieve these goals by having students explore and experiment with content and relate it to their own experience (Weimer 2002). In doing so, the goal is to create independent learners who ultimately take responsibility for their own learning (Boud 1981). Ultimately, there are a variety of ways to balance challenge

and support. It usually begins by setting up an appropriate challenge with clear expectations. From there, instructors may give maximum freedom, monitoring and intervening as necessary; or alternatively use the scaffolding approach by providing all the support needed, and gradually withdrawing it as students gain competencies and independence. Either way, the key is accurately appraising students' needs for support and independence in order to give increasingly more freedom as they take on increasing responsibilities.

Approaching Students as Individuals Comprising a Learning Community

Despite Dewey's largely failed attempt to create a more student-centered than curriculum-centered education, a shift he viewed as the educational equivalent of the Copernican revolution (Dewey 1943/1990), teachers are still largely observed to focus more on their subject than on individual children (Kohn 1999). A variety of principles to enhance learning and motivation suggest educational approaches consistent with this view, such as the APA learner-centered principles (APA 1997) or differentiated instruction (Tomlinson 1999). Key to these approaches is respect for and valuation of individuals with unique backgrounds and ability profiles (Gardner 1993), and providing relevant curricula with choices and ongoing assessments appropriate for the individuals present. Students also have different learning styles. For example, some students are visual learners, while others are kinesthetic (i.e., experiential) or auditory learners (Markova 1996). One important component of keeping students emotionally engaged is responding to the individual learning style of each student by allowing them to interact with materials in different ways and paces, in order for them to develop academically, socially, and emotionally (Dolezal et al. 2003). Effective differentiated instruction also entails the ongoing assessment of individuals, providing individuals with meaningful choices, and planning around different learning styles and levels of readiness (Smith 2009).

Students testify that the engaging teachers that they have had, in their experience, cared and provided active learning opportunities for them as individuals (Cothran and Ennis 2000). Bogner et al. (2002) found that the most highly engaging teachers individualized instruction by emphasizing different strengths and goals of each student, and Lutz et al. (2006) found that when teachers gave direct attention to students individually, they were *highly engaged* 76 % of the time. Perhaps even more interesting is a recent study that demonstrated that teachers are in considerably more flow when utilizing differentiated instruction, stating that it makes the work of teaching become more spontaneous and recreational while at the same time more focused on their best performance (Smith 2009). Because the hallmark of differentiated instruction is knowing individual learners well, it encourages reflective and introspective practice; each student becomes like a different puzzle to be solved, involving the skill and creativity of an artist. Several studies also suggest that higher levels of teacher flow translate or "cross over" into higher levels of student flow (Basom and Frase 2004).

Instructional Practices Promoting Engagement in Public School Classrooms

To date, few studies have systematically examined the direct and moment-by-moment impact of instructional methods and decisions on student engagement. In a recent study, we therefore investigated the following question: *What is the immediate impact of the various instructional practices used by teachers in high school classrooms on student engagement* (Shernoff et al. 2011, 2014)? The goal of this study was to systematically examine instructional practices impacting the moment-by-moment engagement of high school students. Student engagement was again captured by the Experience Sampling Method (ESM), but in this study, it was linked to instructional practices from videoed classroom observations. Because there are many disparate conceptualizations and measurements of student engagement, making it difficult to establish construct validity and to draw conclusions from the related research, a second research question was: *What is the relationship between observer-rated and self-reported measures of student engagement and the relationship of each measure to perceived learning?*

We observed seven 9th–12th grade class sessions in a variety of subjects including English, math, science, social studies, and Spanish. A total of 5 teachers and 140 students participated in the study. Overall, 332 self-reports were collected from the 140 student participants, who were signaled 2 or 3 times in the observed classes (depending on class length), and approximately 8 h of video material was captured.

Each class was videoed in its entirety by two video cameras. One was focused on the teacher and the other on a focus group of four to five conveniently located students. Two coders coded the classroom videos, focusing on observations of classroom interactions preceding each ESM signal. The videos from the cameras on the teacher were coded for instructional practices, including main instructional format and specific instructional features (e.g., rules of the activity, such as the instruction to identify vocabulary words during a video). Videos from the cameras on the students were coded for student behaviors, student engagement, and classroom climate (see Chap. 7). Detailed coding instructions were informed by previous research (e.g., Dolezal et al. 2003). Observational measures of student engagement, adapted from Lutz et al. (2006), consisted of separate ratings for behavioral, cognitive, and affective engagement. Inter-rater reliability (based on Cohen's Kappa) of .80 or above was reached for all coding categories.

Student engagement was again composite of items on concentration, interest, and enjoyment on the ESM ($\alpha = .75$). Other measures consisted of composite variables for positive affect ($\alpha = .83$) and negative affect ($\alpha = .70$) based on factor analysis. A variety of single items measured individual perceptions such as *perceived learning* (i.e., "How much were you learning?"), *attention* ("Were you thinking about the work or subject matter of this class?"), *perceived competence* (i.e., "Were you using a high level of skill?"), *importance*, *control*, and others.

Somewhat unexpectedly, the predictive power of instructional method on the ESM measure of engagement, as assessed by regressing 25 instructional practices coded from the videos onto engagement, was high (i.e., adjusted $R^2 = .87$). There were also strong, significant differences in student engagement and perceived learning (as also measured by the ESM) by teacher, subject, and class. While results may be partially explained by the small number of teachers and the large number of predictors associated with their specific instructional styles, the instructor appeared to be a very powerful factor influencing both engagement and perceived learning. Despite the fact that student engagement is the result of both situational and personal factors, *average* engagement in a classroom (even if individual scores vary around this average) appeared to be remarkably contingent on a combination of identifiable instructional practices that the instructor introduces and controls (see Shernoff et al. 2011, for results in detail).

Positive Influences on Classroom Engagement: Towards Creating Optimal Learning Environments

Based on previous studies (e.g., Shernoff et al. 2003), we expected engagement to be high during small group work and large group discussions, and we expected low engagement during lectures and videos that tend to be more teacher centered. Thus, in the more recent study described above (Shernoff et al. 2011), we were particularly impressed by an extremely talented English teacher of ninth grade honors students who led large group discussions in which verbal contributions needed to be supported by textual evidence and all students needed to contribute to the discussion. He utilized an unconventional seating arrangement of an inner and outer circle to stimulate interaction. The level of discourse was remarkably high, especially for ninth graders. On the other hand, we expected engagement to be low during lectures utilized in social studies, math, and science class, which appeared to be more teacher-centered activities. Similarly, we did not expect engagement to be high while watching videos, but we did expect independent work in small groups would be engaging.

The single most engaging encounter in our sample was a lesson in which a talented history teacher simulated the game show, *Jeopardy*, which quizzed students on history facts. Students clearly saw this as a fun and highly engaging activity, although their ESM responses revealed that they did not interpret it to be particularly important or substantive in terms of learning. Most probably felt that they "got to" play Jeopardy during history class. However, I was struck by this extent to which the episode answered the question: "Why do so many adolescents love sports but do not like school?" While there are many answers to this question, during sports, individuals have the opportunity to do something—such as "make a play"—that will be valued by the community, including the team as well as interested observers. While this opportunity is rarely created in classrooms—students may not be "bench

warmers" per se, but they are often seat warmers—it was certainly created during the Jeopardy simulation. The importance of feeling valued within a community for engaging youth cannot be understated.

Although the high engagement in this scenario was highly predictable, in many other instances, the results were contrary to our expectations, yielding new insights. Some of the highest levels of engagement were reported during lectures in all three classes using lecture, while some of the lowest levels of engagement and perceived learning occurred during large group discussions featuring a high level of discourse. Surprisingly, lectures and other forms of "direct instruction" could provide a foundation for complex activities stimulating optimal learning experiences. The highest average class engagement that students reported in our study was actually during a lecture by a very charismatic teacher. Through a combination of humor and use of topics to which students could relate, this particular instructor was not only entertaining but forged a high degree of cognitive congruence between instructor and students. In other words, he "spoke the students' language," and in doing so, he strongly connected or "reached" the students. The skillful use of humor in engaging students cannot be understated; perhaps nothing goes further in reaching students and creating a positive tone for instruction. Whether this means seeking out the references to humorous episodes in the popular media, or finding amusing newspaper articles, finding small ways to put fun and laughter into activities can increase positive feelings and the sense that life is not always "all work and no play" (Biswas-Diener and Dean 2007).

Of course, not all instructors are natural performers by personality; and although entertaining, perceived learning was frequently low during lectures. However, both engagement and perceived learning were high in the lectures in the math and science classes we observed. Several features contributed to this. For example, in the math classes observed, students were actively taking notes (which was explicitly prompted by the instructor) and/or solving problems with calculators during the lecture. Students were also aware that the activity was a preparation both for a test on the material the next day (as assured with statements from the teacher like "I can assure you that problems of this type will be on the test") and a more interactive activity (e.g., independent problem solving in small groups) that was to follow. In other words, students clearly saw the importance, value, or function of the activity and what they were doing. They could answer the "why?" question.

Lecture was also made engaging by frequently questioning the class, transforming the activity into an "interactive presentation." High teacher enthusiasm and creativity during lecture actually created some of the highest levels of student engagement in our sample. Make no mistake, however: lecture devoid of these compensating characteristics fostered a distinctively "on/off" relationship to students' engagement and perceived learning. As one might expect, students drifted in and out. In particular, behavioral engagement (on-task behavior) and attention was strongest within the first 5–10 min of a lecture, thereafter becoming much less consistent. In some cases, signs of student disengagement as a teacher droned on for an extended period were quite visible (e.g., frequent yawns, fidgeting, and fighting to

stay awake). There appeared to be a firm limit on the attentional resources required to process a steady stream of verbal information consistently.

We also observed high engagement when students reviewed their correct and incorrect answers after taking quiz or a test, as with a vocabulary quiz in the foreign language class we observed. When students did so, their perceived learning of content knowledge was significantly reinforced. Without this activity, the test/quiz was likely perceived as "merely evaluative," without contributing towards learning goals. When students understood the reasons that their test/quiz responses were correct or incorrect, a performance feedback function was satisfied, and students' perceived learning and engagement was enhanced. Our earlier research showed that students rarely have a higher sense of perceived importance than when taking a test or quiz (Shernoff et al. 2003). Testing is perceived to be a process of evaluation more than learning—weighing the cow more than feeding the cow. However, the teacher could capitalize from this pronounced perception of importance by turning the test into a strong learning opportunity. However, the pace of the activity needed to be brisk enough not to completely disengage students who had given mostly correct responses.

As hypothesized, sustained student engagement and perceived learning were created most commonly through *optimal learning environment*s. The most distinctive characteristic of optimal learning environments is *environmental complexity*, which combines environmental challenge and environmental support. Both environmental challenge and support dimensions have several associated but distinctive components that the literature on engagement, motivation, and flow would suggest are operative in facilitating engagement in learning. For example, the challenge dimension typically features clear prescriptions for meaningful and goal-directed action by presenting a task to be completed or challenge to be mastered. These sorts of skill-building tasks usually involve an optimal level of challenge appropriate for the learner's skills and the use of domain-specific tools or technologies in the process of fashioning products (as in the arts) or solving problems (as in the sciences). In addition, the importance of the task is evident, and the goals are clear. In the classroom, this may be stimulated by the assessment of skills, learning, and/or performance (Csikszentmihalyi 1990, 1996, 1997; Csikszentmihalyi and Csikszentmihalyi 1988; Csikszentmihalyi et al. 1993). Key to the challenge dimension is an attitude of mastery and high expectations for mastery, competency, and/or success by the teacher or supervisor.

The support dimension represents the provision of supports necessary to gain the personal resources and competencies necessary for meeting challenges, which includes competency, emotional, and relational support. These features include motivational supports such as support for autonomy (Reeve and Jang 2006; Reeve et al. 2002, 2004), interest (Hidi 1990; Hidi and Renninger 2006), and intrinsic motivation (Deci 1975; Sansone and Harackiewicz 2000); opportunities for activity and interactivity in which respected members have roles and opportunities to make contributions (J. S. Brown et al. 1989; Lave 1988; Lave and Wenger 1991; Scardamalia 1989; Scardamalia and Bereiter 1996; Zhang et al. 2009); and performance feedback or instructional scaffolding.

When many of features of environmental complexity were present, students were usually problem solving, experimenting, or learning by discovery, and were simultaneously obtaining feedback from both teachers and peer. Example instructional formats included independent problem solving, or conducting an experiment in a small group setting, formats we witnessed in both a math and science class. In the learning environments created, each student had a clear script for action (e.g., a problem to solve), but also the benefit of consulting with or working with peers whom assumed valued roles as consultants. The teacher also had a valuable role providing feedback to any students or small groups needing help. Thus, students were not only actively working with materials to solve problems or fashion a product, but were also *interactive*, participating in a community of learners and teachers. Generally speaking, students were challenged but also given the social supports to meet the challenge. The importance and goals of the activity were clear to the students, and it was important for them to perform to the best of their abilities. A defining outcome of such situations is sustained cognitive engagement and concentration. Thus, the single best way to address resource-starved classrooms is to arrange the learning environment in such a way to expand the level of human resources mutually available, thereby unleashing engagement in educational processes (e.g., effort, energy, enthusiasm) embedded in the interactions among students and between students and materials.

Table 6.1 presents characteristics and the associated subjective experiences of optimal learning environments, with several illustrative scenarios. This basic finding was consistent with Dolezal et al.'s (2003) main finding in their classroom observation study that students were more motivated as teachers used more empirically based motivational strategies at once; in this sense, optimal learning environments were marked by *complexity*, in which a variety of engaging dynamics were in play simultaneously. Optimal learning environments were frequently created through structured tasks in individual or small group work with teacher monitoring. Other instructional practices that increased engagement were varied and subject specific. One instructional practice that enhanced engagement during direct instruction, for example, was teacher instructions directing concurrent student action (e.g., solving board problems with a calculator simultaneously with the teacher). Analyses also revealed that the perception of *importance* (i.e., the student regarding the activity as personally important) was the perceptual factor most strongly related to engagement and perceived learning of all the perception items measured (e.g., control, activity level, and belongingness). This was a very strong result; the strength of perceived importance as a predictor of engagement should not be underestimated. By a large margin, when students saw the point or value in what they were doing, they were more engaged. When they didn't, they were not engaged. Overall, findings suggested that it was not so much the choice of main instructional format, but rather how the activity was implemented, including the rules of the activity, task-specific instructions, and seating arrangement, that was the critical factor influencing students' engagement.

Table 6.1 Optimal learning environments: characteristics and the quality of associated experience (Shernoff 2012)[a]

Characteristics	Subjective experience supporting learning
1. *Environmental complexity*: combines environmental challenge (e.g., high task challenge and expectations for mastery) with supportiveness (e.g., relationship support, autonomy support)	1. *Meaningful engagement*: experience of challenge, concentration, and importance simultaneous with positive emotions (e.g., enjoyment, self-esteem, control, intrinsic motivation, interest, creativity, and/or excitement); merging of work and play; in retrospect, happiness and fulfillment, leading to continued motivation and commitment
Other elements that are often present:	
2. Importance of activity are made clear	2. Perception of activity as personally important; sense of purpose
3. Complex task usually involving the use of materials: solving problems or fashioning products	3. Deep concentration; immersion
4. Positive relations/rapport with instructor and peers	4. Feelings of belongingness, acceptance, and self-esteem
5. Goals of the activity are made clear	5. All attention is focused on relevant stimuli towards reaching the goal
6. Interactivity with peers and adults; opportunities to contribute or take initiative	6. Use of skills, enjoyment, self-esteem, spirit of cooperation and/or collaboration; involvement
7. Feedback from instructor and/or peers; effective scaffolding	7. Perceived learning and building of skills
8. Challenge appropriate for skills (challenging but not impossible)	8. Concerted effort: sustained concentration, interest, and enjoyment; self-efficacy; skill building; knowledge accumulation; gratification upon successful effort

[a]Environmental complexity is the most fundamental and global characteristic of optimal learning environments, and several of the subsequent characteristics are also present. Not all characteristics and associated experiences are always present.

Illustrative Scenarios

1. Every student is assigned complex science lab problems involving measurement and drafting with a mutual larger goal; work occurs in small groups for peer consultations and support; students use necessary lab materials to complete the project; the instructor is monitoring all groups and is also providing feedback. Work is expected to be submitted for review at the end of class. Students are highly involved.
2. The activity is a whole-class Jeopardy or other trivia game on history facts and knowledge using PowerPoint or the board. Teacher is enthusiastic and animated. Questions are interesting and pertain to important, relevant historic events or issues. Students both ask each other and answer the questions while the teacher moderates. Rules for playing and winning the game are clear. Many choices are inherent to the game. Students are extremely attentive and intrinsically motivated. Information learned is deeply encoded.

3. The teacher is making a presentation on the board (e.g., solving math problems) or showing a video (e.g., foreign language featuring vocabulary words). Students are provided with the materials to complete an activity concurrently—for example, math problems to be solved with a calculator simultaneously with the teacher or vocabulary words with definitions and examples to be completed that are contained in the video. The teacher is interactively asking questions to students during the presentation and providing feedback with respect to answers. This is a preparation for an upcoming test or quiz, and students should continue to work on similar problems for homework until mastery is achieved. Students are quiet, but wheels are turning.

The Mediating Role of Other Perceptual Factors

Not only was the perception of importance by far the strongest predictor of engagement of a great variety of perceptions we examined, but it was also the most robust predictor of perceived learning and attention. Clearly, a sense of importance hits on all cylinders of engagement in the learning dynamic. Importance was also the greatest predictor of engagement in the nationally representative Sloan study as well (Shernoff 2010). Students were consistently more engaged when they clearly understood the importance of the activity for themselves and their future goals. This underscores the importance of teachers placing activities and course content in a larger context so that students can appreciate the value of what they are asked to learn and do. Unfortunately, this has been found to be relatively rare in public schooling (Damon 2008).

Very interestingly, the teachers' clear communication of their own goals was not sufficient to stimulate the *students'* perception of clear goals and importance. Even when students satisfactorily meet the teachers' goals, this was not the same as students' believing that the activity was important for themselves or their own goals. Only the latter was predictive of engagement. For example, in the English class observed, the teacher was very explicit about *her* goals for each class (e.g., that every student talk, that there be a student discussion leader, and that students support their claims with evidence). And yet for whatever reason, most students did not see the point or relevance of the activity. While it is possible that one reason may have been the lack of a clear connection to assessment or grades as with many activities in other classes, another reason may have been lack of supports to help students find authentic value in the activity, such as a functional role in a larger effort or project leading to a more concrete product.

Other perceptions of classroom instruction were also highly related to engagement, including that of contributing valuable ideas, being active, and the perception that the activity was useful to the learning process. A key mediator of perceived learning was also the perception of investing effort. Taken together, these set of factors speak volumes as to the importance of *valuing* in the learning process. In other words, to feel fully engaged and invested in learning, students needed to value the

activity as important both to themselves and the process of learning, and they also needed to feel like a valued, active, and contributing members of a learning community. Interestingly, this is consistent with the conclusion one draws as to why other environments like alternative school models and structured after-school settings are perceived by youth to be so much more engaging, as will be discussed in Chaps. 10–14 of the book. The role of importance and effortful contributions is central to the valued membership in a community of learners and the legitimate participation inherent to situated learning (Lave and Wenger 1991). Even though effort is central to many theories of motivation such as attribution theory and goals theory, how often is the classroom environment planned specifically to invite conjoint and effortful participation in an activity regarded as intrinsically important? It may be that the expectation for students to take responsibility and initiative (Eccles and Gootman 2002; Larson 2000) are also centrally important to the learning process.

The Interrelationship Among ESM and Observed Measures of Engagement

Because multiple components of engagement were measured both with the ESM and by observation, we were also interested in the relationships among the measures, as well as their relationship of engagement to perceived learning and attention. Attention was based on whether or not students' thoughts during instruction were related to the subject matter or entirely unrelated such as those about family, friends, or out-of-school activities. A correlation matrix showing the relationship among all potential outcome variables is provided in Table 6.2.

Results indicated that the distribution of observed measures of cognitive and behavioral engagement was mainly bimodal (measuring mainly the observation of on task vs. off task) and highly related to each other with neither highly related to affective engagement. The ESM measure of engagement (i.e., concentration, interest, and enjoyment) was more related to perceived learning and attention than the behavioral measure, suggesting that the ESM measure tapped into substantive engagement, whereas the observed measure may have been more procedural. This is not a trivial point, because it suggests that what teachers see when they look at students is not a very reliable indicator of students' deep or substantive engagement in learning. In fact, the observed measures of behavioral and cognitive engagement (i.e., on/off task) were not highly related to the ESM measures of perceived learning, attention, concentration, interest, or affect. In other words, it appeared to have little to do with depth of processing, emotional receptivity, or other indicators of substantive engagement.

Anderson's (2012) study of our data set corroborated this interpretation. Anderson utilized both an ESM measure of substantive engagement and an observational measure of behavioral measure coded from the videotapes. Based on these two dimensions, students were then coded as exhibiting one of four engagement

Table 6.2 Correlation matrix of ESM and observational measures of engagement, with perceived learning and attention

	Substantive engagement (ESM)	Affective engagement	Behavioral engagement	Cognitive engagement	Perceived learning	Attention	Concentration	Interest	Enjoyment
Substantive engagement (ESM)	1.000								
Affective engagement	.40*	1.00							
Behavioral engagement	.19	.24*	1.00						
Cognitive engagement	.28	.25*	.86**	1.00					
Perceived learning	**.47****	.42*	.36	.36	1.00				
Attention	**.44****	.18	.33	.40*	.35**	1.00			
Concentration	.70**	.16	.05	.10	.46**	.39**	1.00		
Interest	.87**	.40*	.17	.20	.34**	.34**	.36**	1.00	
Enjoyment	.87**	.45*	.26	.42*	.36**	.35**	.37**	.76**	1.00

Note. *$p < .05$; **$p < .01$

types: procedural engagement (high behavioral engagement, low substantive engagement), deceptive engagement (high substantive engagement, low behaviorally engaged), nondeceptive engagement, (high substantive engagement, high behavioral engagement), and disengagement (low substantive engagement, low behavioral engagement). He found that when students reported their highest levels of perceived learning, they were most likely to be characterized as nondeceptively engaged, significantly more likely than being categorized as disengaged.

The relationship between the ESM measure and perceived learning was .50, suggesting that they are highly related but distinct constructs. Perceived learning was related to concentration and attention. Interestingly, the observed measures of affective engagement as well as many of the ESM measures of affect were strongly related to perceived learning. This finding suggested that emotions may be at least as important as cognition in the process of learning.

Negative Influences on Classroom Engagement

Results were particularly surprising for the English class utilizing discussion in which students were encouraged to support their claims with evidence. This yielded a high level of discourse seeming to characterize Newmann and associates' (1992) conception of authentic instruction. Nevertheless, these classes yielded relatively low engagement, perceived learning, and perception of importance during the classes observed. While this finding left open to interpretation, it was clear that an optimal learning environment was not always established with the conditions that Newmann and colleagues considered tantamount to engagement. Upon close observation of the video data, it was apparent that students contributed to the discussion only several times during the class, and spent the rest of the time listening to other peers. Most of this time, they were not engaged in a complex task exacting high concentration, receiving performance feedback, nor clear on their goals (despite the fact that the teacher skillfully and repeatedly expressed *her* goals for the activity). Consistent with the ESM data, subtle signs of straying attention and disengagement could be observed in the video data.

Consistent with the proposition that that engagement is suboptimal when the challenges of the task exceed the skill level of the learner, the data suggested that engagement and perceived learning of even complex instructional episodes may be thwarted if the task is beyond the academic level of the students without sufficient modeling or scaffolding. In the example of the class featuring the group discussions, for example, engagement and perceived learning were noticeably lower during independent work during the writing activity in which the ninth grade students were asked to support their answers to a position with textual evidence. Tellingly, results also indicated a low interaction between the challenge and students' skills. Compared to the independent work we observed in the math and science classes, in which engagement was higher, we suspect that this was a very advanced skill for the grade

level of the students—the math equivalent of complex equations—but that the difficulty of the task was not sufficiently realized or appreciated by the instructor in these settings. The teacher assumed that students would just easily be able to "do" the writing of a miniature thesis supported by evidence. We suspected that many academic literacy skills (e.g., formulating hypotheses, experimenting, forming conclusions from evidence, and organizing findings) may be well enough beyond the academic level of entering high school student that instruction of these skills may require additional scaffolding or supports. Those might include breaking the task down into smaller steps, or allowing students to work in smaller groups to be able to ask each other questions with the teacher's feedback.

These somewhat surprising findings regarding these classes that appeared to feature a high level of discourse, nearly synonymous with student engagement in Newman and colleagues' (1992) framework, were corroborated and further clarified by Anderson's (2012) analysis. When analyzing what engagement category characterized each instructional episode, he found that there were episodes in the English class that were best characterized as nondeceptively engaging, as Newmann and associates would predict, but there were just as many episodes that were characterized as procedurally engaging, deceptively engaging, and disengaging. In addition, this was not the only type of classroom interaction that was characterized as nondeceptively engaging. Other styles included a math class featuring interactive lecture and working in small groups with very little discussion, and a social studies class with a teacher who used humor and sometime games to supplement lectures. Anderson found that the most distinctive common denominator of episodes characterized by nondeceptive engagement was not the frequency and level of classroom discourse as assumed by Newmann and colleagues, but rather that students were expected to demonstrate their understanding in one form or another. In fact, the two dimensions of class climate that predicted nondeceptive engagement based on codings from the videotape (see Chap. 7) were an emphasis on conceptual and language development and the presence of assessment.

Another time that we observed engagement and perceived learning to be particularly low, in which many students were completely off task, occurred towards the end of class (often the longer block classes, which were 90 min in length) when students were allowed to complete homework after completing the main classroom activity. Since students know that this work can be completed just as well on their own time, they consider it busy work, and no more important to complete during class time than anything else they would choose to do on their own time. Engagement was also low on occasions in which the teacher framed a question or attempted discussion based strictly on a reading assignment. One interpretation was that an activity based on a reading assignment may have been extremely disengaging for all students who had not completed the assignment. Is the implication that the teachers should steer clear of instruction following up an assignment? Surely, a more productive implication is the need to monitor homework completion. Basing an activity on the assumption that all students have completed it may be at a teacher's own risk.

Overall Impressions

Motivation researchers have identified student perceptions and beliefs (e.g., competency, autonomy, relatedness) that increase motivation, but have spent much less attention identifying the instructional features that facilitate and impede these perceptions within large, heterogeneous high school classrooms. Turner (2010) recently argued that because applying theory (especially motivational theory) to classroom practice seldom passes the test of implementation, more instructional theory needs to be developed inductively in the course of classroom research. Theoretically centering on optimal learning environments will contribute to classroom-based theories of engagement and learning that are of direct utility to teachers. In addition, educators and researchers have focused on curriculum and assessment without fully exploring the extent to which instructional decisions are proximally related to engagement and learning. Identifying evidence-based, engaging instructional practices allows educators to see into the typically black box of engagement for the benefit of classroom teachers.

Methodologically, the combination of the ESM with video techniques appears to be an effective approach to account for the dynamic nature of the classroom and discovering the relationship between instructional practices, engagement, and learning. The number and type of hypotheses able to be tested using this methodology is potentially numerous and varied. For example, we were able to tell the percentage of time students were actually paying attention and thinking about the subject matter while they are classified as behaviorally engaged based on observation (about 80 % of the time). With enough data, specific instructional methods can be associated with a complete experiential profile for a full array of cognitive and emotional dimensions of experience. Researchers could also learn which types of practices facilitate both engagement and perceived learning (or even content learning as measured by Audience Response Systems; see Chap. 14).

Advances in teacher training and professional development are also needed based on such research. Unfortunately, creating a community of learners is not usually modeled effectively in teacher training and professional development. For teachers to realistically be expected to foster collaborative communities of learners, their training needs to occur in an environment characterized by community, communication, and student-teacher interactivity (Pianta and Allen 2008). Unfortunately, teacher professional development has a long history of fragmentation and inconsistency. According to Borko (2004), the federal government spends millions of dollars on in-service seminars and other forms of training that place new teachers in passive roles in which content is vague, irrelevant, and disconnected from their experience. Overall, the quality of the training is often characterized as intellectually superficial and not representative of what we know about how people (and even teachers) learn. Given the vast propensity to teach as we are taught (Stigler and Hiebert 1999), it is no wonder that many teachers go on to teach in this exact same way, making their own students passive recipients of disconnected knowledge. More innovations are needed in teacher professional development, such as

web-based resources and live or online mentoring to include classroom observations and continual, systematic feedback (Pianta and Allen 2008). Classrooms are complex social systems, and the quality of interaction among teachers and students can change by providing teachers with knowledge of motivational and learning processes in combination with personalized feedback and support for fostering rich classroom interactions.

Conclusion

Overall, findings from the studies discussed in this chapter were suggestive that instructional approach is a major factor with the potential to highly engage students in traditional public school classrooms. One of the main discoveries made extending previous studies was that the instructional format itself (e.g., lecture, discussion, group work, and test) was not as predictive as the ways in which each of those formats could be implemented. Thus, when one analyzed what the main differences between instructional episodes yielding high versus low engagement are, what immerged was not a distinct pattern in terms of the instructional format used, but rather a set of characteristics that defined *optimal learning environments* such as optimal challenge, a complex task often involving the use of materials, clear and important student goals for the activity, teacher monitoring and feedback, high teacher expectations, and good rapport between teacher and students.

References

American Psychological Association. (1997). *Learner-centered psychological principles: A framework for school redesign and reform*. http://www.cdl.org/resource-library/articles/learner_centered.php. Accessed 13 Oct 2010.

Anderson, B. G. (2012). *Temporarily linking classroom contextual factors and instructional practices to procedural and substantive engagement in the high school classroom*. DeKalb: Northern Illinois University.

Basom, M. R., & Frase, L. (2004). Creating optimal work environments: Exploring teacher flow experiences. *Mentoring and Tutoring, 12*(2), 241–258.

Biswas-Diener, R., & Dean, B. (2007). *Positive psychology coaching: Putting the science of happiness to work for your clients*. Hoboken: Wiley.

Bogner, K., Raphael, L., & Pressley, M. (2002). How grade 1 teachers motivate literate activity by their students. *Scientific Studies of Reading, 6*(2), 135–165.

Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher, 33*(8), 3–15.

Boud, D. (Ed.). (1981). *Developing autonomy in student learning*. London: Kogan Page.

Brown, A. L., & Campione, J. C. (1994). Guided discovery in a community of learners. In K. McGilly (Ed.), *Classroom lessons: Integrating cognitive theory and classroom practice*. Cambridge, MA: MIT Press/Bradford Books.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42.

Connell, J. P., & Wellborn, J. G. (1990). Competence, autonomy and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *The Minnesota symposium on child psychology* (Self-processes in development, Vol. 22, pp. 43–77). Hillsdale: Erlbaum.

Cothran, D. J., & Ennis, C. D. (2000). Building bridges to student engagement: Communicating respect and care for students in urban high schools. *Journal of Research and Development in Education, 33*(2), 106–117.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Perennial.

Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. New York: HarperCollins.

Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. New York: Basic Books.

Csikszentmihalyi, M., & Csikszentmihalyi, I. S. (Eds.). (1988). *Optimal experience: Psychological studies of flow in consciousness*. New York: Cambridge University Press.

Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1993). *Talented teenagers: The roots of success and failure*. New York: Cambridge University Press.

Damon, W. (2008). *The path to purpose: How young people find their calling in life*. New York: Free Press.

Deci, E. L. (1975). *Intrinsic motivation* (Perspectives in social psychology, Vol. 1). New York: Plenum Press.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior* (Perspectives in social psychology). New York: Plenum.

Dewey, J. (1943/1990). *The school and society and the child and the curriculum* (2nd ed.). Chicago: University of Chicago Press.

Dolezal, S. E., Welsh, L. M., Pressley, M., & Vincent, M. M. (2003). How nine third-grade teachers motivate student academic engagement. *The Elementary School Journal, 103*(3), 239–267.

Eccles, J. S., & Gootman, J. A. (2002). *Community programs to promote youth development*. Washington, DC: National Academy Press.

Gamoran, A., & Nystrand, M. (1992). Taking students seriously. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 40–61). New York: Teachers College Press.

Gardner, H. (1993). *Multiple intelligences: The theory in practice*. New York: Basic Books.

Guthrie, J. T., Wigfield, A., Metsala, J. L., & Cox, K. E. (1999). Motivational and cognitive predictors of text comprehension and reading amount. *Scientific Studies of Reading, 3*(3), 231–256.

Guthrie, J. T., Wigfield, A., & VonSecker, C. (2000). Effects of integrated instruction on motivation and strategy use in reading. *Journal of Educational Psychology, 92*(2), 331–341.

Hidi, S. (1990). Interest and its contribution as a mental resource for learning. *Review of Educational Research, 60*(4), 549–571.

Hidi, S., & Renninger, K. A. (2006). The four-phase model of interest development. *Educational Psychologist, 41*(2), 111–127.

Kelly, S., & Turner, J. (2009). Rethinking the effects of classroom activity structure on the engagement of low-achieving students. *Teachers College Record, 111*(7), 1665–1692.

Kohn, A. (1999). *The schools our children deserve: Moving beyond traditional classrooms and "tougher standards"*. Boston: Houghton Mifflin Company.

Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55*(1), 170–183.

Lave, J. (1988). *Cognition in practice*. Cambridge: Cambridge University Press.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Lutz, S. L., Guthrie, J. T., & Davis, M. H. (2006). Scaffolding for engagement in elementary school reading instruction. *The Journal of Educational Research, 100*(1), 3–20.

Markova, D. (1996). *The open mind: Discovering the six patterns of natural intelligence*. Berkeley: Conari Press.
Mehan, H. (1979). *Learning lessons: Social organization in the classrooms*. Cambridge, MA: Harvard University Press.
Meyer, D. K., & Turner, J. C. (2007). Scaffolding emotions in classrooms. In P. A. Schutz & R. Pekrun (Eds.), *Emotion in education* (pp. 243–258). Burlington: Elsevier.
Nakamura, J., & Shernoff, D. J. (2009). *Good mentoring: Fostering excellent practice in higher education*. San Francisco: Jossey-Bass.
Newmann, F. M., Wehlage, G. G., & Lamborn, S. D. (1992). The significance and sources of student engagement. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 11–39). New York: Teachers College Press.
Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York: Oxford University Press.
Paavola, S., Lipponen, L., & Hakkarainen, K. (2004). Models of innovative knowledge communities and three metaphors of learning. *Review of Educational Research, 74*(4), 557–576.
Palincsar, A. S., & Herrenkohl, L. R. (1999). Designing collaborative learning contexts. *Theory into Practice, 41*(1), 26–32.
Patrick, H., Turner, J. C., Meyer, D. K., & Midgley, C. (2003). How teachers establish psychological environments during the first days of school: Associations with avoidance in mathematics. *Teachers College Record, 105*(8), 1521–1558.
Pianta, R. C., & Allen, J. P. (2008). Building capacity for positive youth development in secondary school classrooms: Changing teachers' interactions with students. In M. Shinn & H. Yoshikawa (Eds.), *Toward positive youth development: Transforming schools and community programs* (pp. 21–39). Oxford, UK: Oxford University Press.
Pianta, R. C., & Hamre, B. K. (2009). Classroom processes and positive youth development: Conceptualizing, measuring, and improving the capacity of interactions between teachers and students. *New Directions for Youth Development, 121*, 33–46.
Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist, 44*(3), 159–175.
Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of Educational Psychology, 98*, 209–218. doi:10.1037/0022-0663.98.1.209.
Reeve, J., Jang, H., Hardre, P., & Omura, M. (2002). Providing a rationale in an autonomy-supportive way as a strategy to motivate others during an uninteresting activity. *Motivation and Emotion, 26*(3), 183–207.
Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and Emotion, 28*(2), 147–169.
Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in a social context*. New York: Oxford University Press.
Rogoff, B. (1995). Development through participation in sociocultural activity. *New Directions for Child Development, 67*, 45–65.
Rogoff, B. (2003). *The cultural nature of human development*. Oxford: Oxford University Press.
Sansone, C., & Harackiewicz, J. M. (2000). *Intrinsic and extrinsic motivation: The search for optimal motivation and performance*. San Diego: Academic.
Scardamalia, M. (1989). Computer-supported intentional learning environments. *Journal of Educational Computing Research, 5*(1), 51–68.
Scardamalia, M., & Bereiter, C. (1996). Engaging students in a knowledge society. *Educational Leadership, 54*(3), 6–10.
Schlechty, P. C. (1997). *Inventing better schools: An action plan for education reform* (p. 294). San Francisco: The Jossey-Bass Education Series.
Schunk, D. H., Pintrich, P. R., & Meece, J. L. (Eds.). (2008). *Motivation in education: Theory, research, and applications* (3rd ed.). Upper Saddle River: Merril Prentice Hall.
Shernoff, D. J. (2010). *The experience of student engagement in high school classrooms: Influences and effects on long-term outcomes*. Saarbruken: Lambert Academic.

Shernoff, D. J. (2012). Engagement and positive youth development: Creating optimal learning environments. In K. R. Harris, S. Graham, & T. Urdan (Eds.), *The APA educational psychology handbook* (Vol. 3, pp. 195–220). Washington, DC: American Psychological Association.

Shernoff, D. J., & Csikszentmihalyi, M. (2009). Flow in schools: Cultivating engaged learners and optimal learning environments. In R. C. Gilman, E. S. Heubner, & M. J. Furlong (Eds.), *Handbook of positive psychology in schools* (pp. 131–145). New York: Routledge.

Shernoff, D. J., Csikszentmihalyi, M., Schneider, B., & Shernoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18*(2), 158–176.

Shernoff, D. J., Tonks, S., & Anderson, B. G. (2014). The impact of the learning environment on student engagement in high school classrooms. In D. J. Shernoff, & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbook by Teachers College Record.

Shernoff, D. J., Tonks, S. M., Anderson, B., & Dortch, C. (2011, April). *Linking instructional practices with student engagement from moment to moment in high school classrooms.* Paper presented in annual meeting of the American Educational Research Association, New Orleans.

Shinn, M., & Yoshikawa, H. (Eds.). (2008). *Toward positive youth development: Transforming schools and community programs*. Oxford, UK: Oxford University Press.

Sizer, T. (1984). *Horace's compromise: The dilemma of the American high school*. Boston: Houghton Mifflin.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*(4), 571–581.

Skinner, E. A., Furrer, C., Marchand, G., & Kindermann, T. (2008). Engagement and disaffection in the classroom: Part of a larger motivational dynamic? *Journal of Educational Psychology, 100*(4), 765–781.

Smith, M. (2009). *Differentiated instruction and teacher flow*. Minnesota: St. Mary's University of Minnesota.

Stigler, J. W., & Hiebert, J. (1999). *The teaching gap: Best ideas from the world's teachers for improving education in the classroom*. New York: Free Press.

Tomlinson, C. A. (1999). *The differentiated classroom. Responding to the needs of all learners* (p. 145). Alexandria: Association for Supervision and Curriculum Development.

Turner, J. C. (2010, May). *Understanding classroom research and its contributions to our understanding of motivation to learn.* Paper presented at the annual meeting of the American Educational Research Association, Denver.

Turner, J. C., & Meyer, D. K. (2004). A classroom perspective on the principle of moderate challenge in mathematics. *The Journal of Educational Research, 97*(6), 311–318.

Turner, J. C., & Warzon, K. B. (2009, April). *Pathways to teacher motivation: The outcomes of teacher-student interaction.* Paper presented at the annual meeting of the American Educational Research Association, San Diego.

Turner, J. C., Meyer, D. K., Cox, K. E., Logan, C., DiCintio, M., & Thomas, C. T. (1998). Creating contexts for involvement in mathematics. *Journal of Educational Psychology, 90*(4), 730–745.

Vandell, D. L., Shernoff, D. J., Pierce, K. M., Bolt, D. M., Dadisman, K., & Brown, B. B. (2005). Activities, engagement, and emotion in after-school programs (and elsewhere). *New Directions for Youth Development, 105*, 121–129.

Vygotsky, L. (Ed.). (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Weimer, M. (2002). *Learner-centered teaching: Five key changes to practice* (The Jossey-Bass higher and adult education series, p. 258). San Francisco: Jossey-Bass.

Zhang, J., Scardamalia, M., Reeve, R., & Messina, R. (2009). Designs for collective cognitive responsibility in knowledge-building communities. *The Journal of the Learning Sciences, 18*(1), 7–44.

Chapter 7
Connecting to "The Who": The Primacy of Supportive Relationships

Introduction

A useful question one might repeatedly ask oneself when reflecting on engagement is why children or adolescents should be engaged in the first place. Why should they care about school, about doing what teachers ask of them? When students come to believe that teachers or other meaningful adults do not care about them, it is only human nature for them not to care either. Adolescents report that they would learn more if teachers cared about them personally, but that those connections are rare (Johnson 1997). While there is no lack of truly wonderful and caring teachers, the design of traditional public classrooms works against mutually caring and respectful relationships. Unfortunately, the quality of relationships is frequently an afterthought in the battle over curricula, testing, funding, and other aspects of school structure (Pianta and Allen 2008). Although grades are a primary motivator for students in school, a deeper reason for students' caring so much about them is often how success and failure effects their relationships with parents and peers (Steinberg et al. 1996). If this principle were fully understood and taken seriously, many other problems of teaching and learning would likely be of only secondary importance. Although often subconscious, one of the only true answers to why students *do* care, other than believing that they are getting something of value out of school, is the belief that they are *cared about* in the process of schooling; thus, they usually welcome participating in a mutually caring social arrangement with willing adults. In this chapter, we review the literature on the importance of different kinds of supportive relationships, including support from teachers, mentors, parents, and peers. We next present results from our ESM and video studies suggestive that the supportive dimensions of students' experience, including relationship support, have a profound impact on students' engagement in public school classrooms.

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The Primacy of Interpersonal Relationships in Adolescent Development

It is almost an understatement that adolescents are fully embedded in a world of social relationships. As students enter middle school, their social networks have an increasingly important social–emotional influence on their attitudes towards school and motivation to succeed (Furlong et al. 2003). Adolescents come to live for their social relationships, with many students suffering for years if unaccepted by their peers (Noddings 2003). Despite the increased salience of relationships, children's feelings of relatedness tend to drop by the middle school years (Davidson et al. 2010; Eccles et al. 1993; Roeser and Eccles 1998).

Overall, the presence of a caring relationship is a critical mediator for growth and has an appreciable effect on whether or not students thrive (Deci and Ryan 1985; Eccles and Gootman 2002). Due to the pervasive influence of relationships on multiple facets of student motivation, Martin and Dowson (2009) recently demonstrated how most of the dominant motivational theories may be conceptualized in primarily relational terms. In other words, relationships can be seen as the major mediator through which dynamics such as vicarious reinforcement, attributions for success and failure, and achievement motivation operate. For example, relationships may have a powerful effect on one's sense of self-worth, which in turn has been shown to impact motivation. Adolescents not only learn self-efficacy through building their skills while interacting with peers, but they also see self-efficacy modeled in their relationships with adults.

A growing number of studies help to support this view. Typically, research has examined the effect of feelings of connectedness with specific social partners—with teachers, parents, and mentors being the most common adult categories. Studies have found that relatedness in all of these categories have an important and unique contributions to school engagement (e.g., Furrer and Skinner 2003; Rhodes 2002; Steinberg et al. 1996). In fact, social support from parents, friends, teachers, and classmates is one of the strongest predictors of life satisfaction (Gilman et al. 2009). As a focus on relationships has been the fastest growing area of engagement research in the past 15 years, we have quickly gone from the realization that "relationships matter" (Klem and Connell 2004) to understanding that few things may matter more.

Most research on relationships in school focuses on relationship support from teachers, parents, mentors, or peers. We focus below primarily on teacher support, but also discuss some of the other important sources of relationship support. Following this, we share what our studies in high school classrooms combining video and ESM showed about relational support in the classroom.

Teacher Support

What is teacher support and what does it look like? First, teachers provide *emotional support* by being involved in students' welfare and getting to know each student individually (Klem and Connell 2004). The teacher encourages, accepts,

trusts, respects, and otherwise demonstrates that he or she cares about students' emotional well-being. When their relationship with their teacher is emotionally supportive, students experience more enjoyment and interest in their schoolwork, have more positive self-concept and higher self-efficacy, are more likely to use self-regulatory strategies, and persevere in the face of difficulty and criticism (Furrer and Skinner 2003; Patrick et al. 2007; Ryan and Patrick 2001). Students are also more likely to view teachers with whom they share a close relationship as a source of support to achieve their academic goals (Birch and Ladd 1997). Teachers can also facilitate a positive social environment and promote interaction among peers which includes the mutual exchange of ideas, perspective taking, and reflective thinking (Ryan and Patrick 2001).

A particular area in which teachers can demonstrate their trust is in supporting a student's ability to make his or her own decisions; researchers refer to this as *autonomy support* (Deci and Ryan 1985; Reeve et al. 2004). They also provide *instrumental support* by effectively scaffolding through structured questioning intended to help students progress and reach a higher level of understanding. Instrumental support also includes providing materials for students to complete assignments (e.g., calculators, worksheets, art materials, and measurement instruments), listening to students' opinions before making instructional decisions, and encouraging them to ask questions and seek help as needed.

Teachers' support and students' engagement are found to be bidirectional and reciprocal: As students receive more support from teachers, teachers receive greater engagement from students and vice versa (Connell and Wellborn 1991; Furrer and Skinner 2009; Martin and Dowson 2009; Osterman 2000). In addition, teacher support has been found to mitigate downward trends in intrinsic motivation and engagement (Marchand 2011). The relationship is also interactive over time. For example, the potency of supportive teacher relations appears to be greater in middle school than elementary school (Klem and Connell 2004), with middle school students' reports of teacher caring predicting changes in their motivational outcomes over 2 years (Wentzel 1997). Middle school students with high levels of teacher support are almost three times more likely to have high levels of engagement, which makes sense when we consider the salience of interpersonal relations as students reach adolescence (Furrer and Skinner 2003; Klem and Connell 2004).

When teachers make efforts to form personal connections with adolescent students, such that students feel acknowledged, they dramatically enhance students' motivation and functioning both in and outside of school (Roeser et al. 1998; Skinner et al. 1998). Positive emotional support from teachers is related to emotional well-being, whereas lack of support is related to internalizing problems like depression, pervading life outside of school (Mitchell-Copeland et al. 1997; Reddy et al. 2003; Way et al. 2007; Wentzel 1997, 1998). Studies have shown that students who maintain caring and supportive relationships have more positive academic attitudes and mastery-oriented goals, higher levels of interest and self-efficacy, and are more satisfied with school (Battistich et al. 1997; Midgley et al. 1989; Mitchell-Copeland et al. 1997; Murdock and Miller 2003; Ryan and Patrick 2001; Sanchez et al. 2005; Solomon et al. 2000; Valeski and Stipek 2001; Wentzel 1997, 1998). Hence, a key feature distinguishing at-risk adolescents who succeed in school from

those who do not is a close and supportive relationship with a teacher (Resnick et al. 1997). Supportive relationships with teachers and other school adults have been found to be supportive to the academic motivation and success of minority students in particular, because caring adults can offer information about cultural practices, help students to overcome language difficulties, and buffer the stresses of migration and discrimination (Garcia-Reid 2007; Green et al. 2008a).

With respect to engagement specifically, a substantial amount of research has yielded remarkably consistent results in support of the proposition that the quality of student–teacher relations, or relational support from the teacher, is positively associated with the quality of students' engagement in school or classrooms (Connell and Wellborn 1991; Furrer and Skinner 2003; Garcia-Reid 2007; Green et al. 2008b; Hudley et al. 2003; Hughes and Kwok 2007; Hughes et al. 2006; Kalil and Ziol-Guest 2008; Klem and Connell 2004; Meyer and Turner 2007; Patrick et al. 2007; Roeser and Eccles 1998; Ryan and Patrick 2001; Sharkey et al. 2008; Skinner and Belmont 1993; Tucker et al. 2002; Urdan and Schoenfelder 2006; Voelkl 1995; Wentzel 1997, 1998). These findings were also reflected in Roorda and colleague's (2009) meta-analysis. Various studies have found that when students believe that the teacher is warm and caring, is understanding and dependable, and supports their autonomy, they are more likely to feel accepted, have more positive affect, work hard, persevere in the face of difficulty, accept direction and criticism, seek help more, cope better with stress, and are more attentive to the teacher (Hughes and Kwok 2007; Martin and Dowson 2009). In addition, studies have shown that students who feel supported by teachers perceive themselves as being more autonomous, which in turn predicts higher engagement (Marchand 2011).

Teacher support has also been found to lead to improved student academic performance and achievement (Burchinal et al. 2002; Furrer and Skinner 2003; Klem and Connell 2004; Marchant et al. 2001; Pianta et al. 1997; Roeser et al. 1996, 2000; Roorda et al. 2009; Woolley and Bowen 2007), with the relationship between teachers' academic support and achievement mediated by an academic engagement (Chen 2005; Furrer and Skinner 2003; Hughes and Kwok 2007).

The natural implication from this body of research is the importance of creating more personalized educational environments, strengthening relationships among student and teachers, and taking more collective responsibility for every child's success (Klem and Connell 2004). Both teacher support and high expectations for learning lead to improved engagement and achievement, and the combination of the two exceeds outcomes associated with either one individually. The higher the environmental challenge and teacher expectations, the more of a need there is for relational support, and the greater the payoff.

Mentoring Relationships

A mentor is conceived as someone who serves as advisor, sponsor, host, exemplar, and/or guide for a younger or less experienced person (Levinson 1978). In youth mentoring relationships, effective mentors bestow responsibility, trust, and

opportunities to help youth fulfill their aspirations and work towards goals that are beneficial for their development. Studies have revealed that mentoring relationships are significantly associated with positive developmental outcomes for youth (Rhodes 2002; Zimmerman and Bingenheimer 2002). While the sizes of the effects are small on average, that is likely due to the variability in the quality of the mentoring relationship. A trusting, close relationship appears to be the key ingredient for effective mentoring to occur (Langhout et al. 2004). Without a close and trusting connection, the dynamics that can make mentoring so beneficial are not likely to be in place (Herrera et al. 2000). At the crux of the mentoring relationship is the bond that is formed. If one fails to form, then the two parties may disengage before the relationship has lasted long enough to exert an influence. On the other hand, the most documented asset among resilient children is a strong bond to a competent and caring adult (Anderson et al. 2004; Rhodes 2002).

What types of mentoring relationships are most effective? Relationships that are youth centered in their orientation, as opposed to being driven by the expectations and interests of the mentor, have been found to predict greater relationship quality and duration (Herrera et al. 2000). Not surprisingly, among the most common characteristics of effective mentoring relationships are that they are both supportive and challenging. That is, developmental outcomes are most favorable when youth reported that their mentors provided both structure and support; the support was unconditional, but the nature of the relationship was beyond a "mere friendship" (Langhout et al. 2004). Effective mentors scaffolded and structured youth's experience for the benefit of their growth while simultaneously remaining sensitive to their need for autonomy and ownership of new initiatives.

Because the search for identity and possible selves is a major developmental task during adolescence (Cross and Markus 1991, 1994; Erikson 1968, 1980; Fletcher 2007; Markus and Nurius 1986; Oyserman et al. 2004; Oyserman and Markus 1990; Plimmer and Schmidt 2007), adolescents are keen observers of individuals with whom they identify, searching for role models who connect with their interests and values. When mentors introduce young people to a domain of interest, model their own curiosity and passion, and help youths to develop the self-confidence to build competencies even in the face of obstacles, there can be a lasting influence on youths' capital E "Engagement" and lifelong commitment to an area of interest (Nakamura and Shernoff 2009). In addition, mentors can provide their mentees with social capital, helping those who might otherwise be adrift to make connections with other caring and cooperative individuals or organizations within the community.

Because mentors often have a broader, more informed knowledge base about professions, as well as an intimate familiarity with the interests and talents of the youth they mentor, they are in a unique position to provide guidance especially with respect to future careers. Such a finding was supported by Nakamura and Shernoff's (2009) study of successful mentoring relationships in the context of graduate advisorships in the field of genetics. The study found that in close mentoring relationships, the mentee not only learned specific scientific knowledge and skills from the mentor but also, perhaps more importantly, frequently internalized or "absorbed"

the mentor's professional values. Observing the mentor's practices and beliefs in action became a powerful vicarious motivator. New professionals in training not only observed the contagious enthusiasm of their mentors while doing *good work* (Gardner et al. 2001), but also had the opportunity to emulate such behavior while highly engaged within a chosen field.

Despite increasing evidence of the value of mentoring and other interpersonal relationships for healthy adolescent development (Noam and Fiore 2004; Rhodes 2004), little attention has been paid to the process of relationship formation and the competencies involved. However, one study attempted to peer into the black box of relationship formation and found that the processes involved were related to flow experiences. Markowitz et al. (in press) conceptualized the relationship-building process in the context of the Young Women Leaders Program (YWLP) as engaging in "relational flow," involving a balance between relational challenges and competencies such as listening, sharing, and communication skills (see Chap. 13 for a full profile of the program). When in relational flow, one is totally absorbed in the social processes of relationship building; and the specific nature of the activity seems secondary to engagement *with* a significant mentor or peer. Experiencing enjoyment, focused attention, and interest in this process was found to be essential to relational flow.

Parental Relationships

In the tradition of Baumrind (1971, 1989), a great deal of research has corroborated the finding that children with parents who combine demandingness (e.g., high expectations for success, doing one's best, adhering to rules) and supportiveness (e.g., acceptance, involvement, and autonomy support) in their upbringing are more engaged and intrinsically motivated, spend more time doing homework, have higher achievement, and have less problematic behaviors than children with parents failing to provide one or both of these two essential dimensions (see Rathunde 1996; Steinberg et al. 1996). The motivational effectiveness of combining challenge or structure with emotional supportiveness applies not only to parental relationships but also to teaching relationship and styles (Ford 1992; Skinner and Belmont 1993; Turner et al. 2002, 2003; Wentzel 2002). Thus, students are more likely to adopt the academic and social goals of teachers who provide clear directions and expectations about those goals as well as the help, advice, and guidance to achieve them (Wentzel 2009).

Relationships with Peers

Peers can be one of the most potent influences on adolescents' day-to-day behavior (Steinberg et al. 1996). In fact, peers are thought to be more influential than parents when it comes to making day-to-day decisions about schooling such as whether to

attend class, how much time to spend on homework, and how hard to try—all of which impacts what grades students get and their academic achievement (Steinberg et al.). Adolescents who are more secure with their friends also tend to have higher self-esteem and better integrated identities (Ryan et al. 1994). Research has demonstrated that peer acceptance is associated with student engagement and school satisfaction specifically (Ryan 2000), with support from peers related to both emotional and behavioral forms of engagement (Li et al. 2010). Just as with the relationship between teacher support and engagement, the process is interactive and reciprocal (Ladd et al. 1999). For example, when adolescents become rejected by their peers, their interest and engagement in school decreases, they become at increased risk for alienation and dropout, and this in turn impacts how they relate to their peers (Buhs and Ladd 2001).

The Problem: Human Relationships Not Yet at the Center

Despite the overwhelming evidence testifying to the importance of supportive relationships in fostering engagement, it is difficult to create a personalized educational environment in typical public high schools (Darling-Hammond 2002). Often adolescence are treated as children whose behaviors need to be controlled rather than "independently acting and thinking individuals," in Einstein's words (see Chap. 2), deemed worth getting to know. One might say that typical schools are more curricular and achievement centric than people-centric. In the emotional climate created, students are often open about their desire to do the minimum work necessary to obtain their goals (Rayyes 2011). Fortunately, research indicates that the meaningful relationships that promote engagement as well as other positive outcomes for youth can be fostered in authentic learning communities (Rayyes 2011; Zhao and Kuh 2004).

The Importance of Classroom Climate

Because of the vast importance of supportive relationships, researchers have attempted to identify various dimensions of support. For example, A. L. Davidson and Phelan (1999) characterized the central components of student–teacher relationships as trust, respect, and care. Wentzel (2009) characterized the motivational aspect of teacher–student relationships as including challenge and support dimensions in the tradition of Baumrind, as well as teacher communications and expectations, willingness to provide advice and instruction, and emotional support and safety. When teachers have been asked specific things that they do to demonstrate caring to their students, almost two-thirds of those asked referred to affective qualities of interpersonal interactions like supporting self-esteem and creating a climate

of positive rapport, trust, and respect (Weinstein 1998). Ethnographic research has supported the proposition that these are indeed important aspects of perceived support (Moje 1996).

The realization that the classroom climate and the affective aspect of interactions play the critical role in students' perceptions of support poses a special challenge for researchers. One problem is: What is the appropriate *unit of analysis*? For example, should researchers be comparing individual students, classrooms, or schools (Fraser and Fisher 1982)? For the most part, studies seek to relate differences in individual students' perception of support to differences in student outcomes. By focusing on individual differences, much research disregards the possibility that teacher and classroom effects may be drivers of student perceptions of support and related outcomes. This possibility may be a probability when considering that instructional styles and interventions exist at the teacher or class level (Wentzel 2009). A small literature on classroom climate does exist (Allodi 2010; Fraser 1998; Fraser and Fisher 1982; Galini and Efthymia 2009; Opolot-Okurut 2010). Because most of these studies utilize surveys of individual students' perceptions of the classroom climate, however, the unit of analysis in researching even classroom-level differences is still the individual student.

To gain some theoretical guidance on this issue, a useful question is not "what is learning?" but "where is learning?" Vygotsky and others illustrated the nature in which learning is seen as a social, cultural, and transactional process mediated through language and other cultural tools. Much of contemporary educational psychology has largely followed in this constructivist tradition, highlighting the reciprocal, situated, and collaborative nature of learning within authentic contexts and learning communities (Brown and Campione 1994; Brown et al. 1989; Paavola et al. 2004; Palincsar and Herrenkohl 1999; Rogoff 1990, 1995, 2003; Scardamalia 1989; Zhang et al. 2009). However, research methods largely lag behind, dominated by surveys to tap individual constructs rather than characteristics of salient relationships, interactions, and communities of learners that characterize learning environments. This is only one of perhaps several reasons that research on learning environments, including the social and relational climate, has arguably not received due attention by researchers (Allodi 2010).

Linking the Learning Environment with Students' Subjective Experiences While in Class

In Chap. 6, we described our study examining the immediate effect of instructional practices on the moment-by-moment engagement of high school students. A focus on instructional practices as controlled by the teacher can be helpful in terms of implications for teacher practice and professional development, but may be somewhat reductionistic. That is, the expectation was to find one-way, linear effects of individual instructional practices on individual students. If engagement with learning arises

from the reciprocal interaction between learners and a learning environment as suggested by contemporary educational psychology, however, a more holistic approach may be needed. The teacher's potential to engage students exists as a function of his or her ability to create, shape, and influence the whole learning *environment*, which may then become a greater factor than the teacher's more specific instructional behaviors within it. Methodologically, we therefore devised a new instrument to capture dimensions of the classroom environment that theory and research suggests would influence motivation and engagement to learn. We used the instrument to investigate the following research question: *What is the influence of research-based dimensions of the motivational and learning environment on students' engagement while participating in that environment?* Given the prevailing literature, we expected that support or relational dimensions of the learning environment would be particularly influential (see Shernoff et al. 2011, for a fuller description of the study).

As suggested in Chap. 6, the immediate learning environment is likely to be among the most salient, if not the very most salient, factors contributing to children's engagement to learn. By definition, engagement is created by characteristics of *optimal learning environments*. As we have seen, the primary theoretical feature of optimal learning environment is environmental complexity consisting of combined dimensions of environmental challenge and environmental support. To summarize, features of the challenge dimension included optimally challenging tasks, a focus on conceptual and/or language development, clear goals, the use of tools for fashioning products or solving problems, task importance, high expectations for mastery, and the assessment of competencies. Components of the support dimension include motivational/autonomy supports, opportunities for activity and interactivity, feedback or scaffolding, and positive relationships with adults and peers (see Chap. 6).

Observing and Studying the Learning Environment

The participants and methods were the same as described in Chap. 6. Seven high school classes were observed and videotaped in five different subjects in two schools. Students also participated in the ESM, and their responses were linked to what was happening in the classroom. Our research team coded the learning environment as a whole for those dimensions expected to facilitate engagement in learning. A learning environment observational assessment instrument was created for this purpose. Categories included in the assessment instrument were based on previous research of student engagement from the perspective of flow theory, a thorough review of the engagement literature, and literature on learning environments and classroom climate (e.g., American Psychological Association 1997; Brophy and Good 1986; Fraser 1998; Larson 2011; Reeve et al. 2004; Shernoff 2010, 2012; Skinner and Belmont 1993; Turner 2010; Urdan and Turner 2005; Zedan 2010). We

called the instrument the Optimal Learning Environment–Observational Log and Assessment (OLE-OLA). Although still under development, a complete list of all 12 dimensions and their subcomponents can be found in the Appendix.

Each dimension of the OLE-OLA was rated on a seven-point scale following the procedure and general rating categories of the Classroom Assessment Scoring System (CLASS; Pianta et al. 2008). For example, a scoring range from 1 (minimally characteristic) to 7 (highly characteristic) was given for each dimension representing the extent to which it was characteristic of the classroom learning environment. The overall learning environment in the instructional episode or situation preceding each of the 27 beeps across all classroom observations was the unit of analysis that was coded. The coder made a judgment regarding the frequency, intensity, and range of each dimension for each episode. Each dimension included several more specific descriptors or indicators. Each coder took notes while viewing the video which formed the basis of the score and was useful for comparing scores to other coders. Unlike the procedure for the CLASS, however, averages were not taken across episodes in favor of examining the variation from one time point to the next. Following the system outlined for the CLASS, Inter-rater agreement of the OLE-OLA was approximately .72.

Factor analysis of the 12 dimensions revealed a single underlying factor with high loadings for clear goals, complex tasks, conceptual and language development, motivational support, interactivity, and feedback. Given that these dimensions were somewhat evenly balanced between components of environmental challenge and environmental support, the underlying factor appeared to be environmental complexity in which challenge and support dimensions are well balanced. This underlying factor was significantly related to students' perceptions of involvement, contributing ideas, positive affect, engagement, challenge, skill use, clear goals, feeling accepted, and effort. The validity and unidimensionality of this underlying construct was confirmed by good fit with the Rasch model (Cavanagh & Shernoff, in progress).

This finding underscored the notion that environmental complexity is likely the chief attribute of optimal learning environments in terms of stimulating flow, engagement, self-efficacy, and a strong sense of participation. In complex environments, students were significantly but appropriately challenged with high teacher expectations, but also given the supports to be successful, including competency, motivational, relational, and social/emotional supports. Thus, *optimal learning environments* were characterized by environmental complexity in which environmental challenge and support were combined. Predominant elements of the learning environment included the use of materials, optimal challenge, high teacher expectations, positive teacher–student and peer relationships, clearly expressed goals for the activity, teacher monitoring and feedback/scaffolding, and teacher enthusiasm/creativity. Optimal learning environments were frequently created through structured tasks in individual or small group work with teacher monitoring. One instructional practice that enhanced engagement during direct instruction or presentations,

for example, was teacher instructions directing concurrent student action (e.g., solving board problems with a calculator simultaneous with the teacher). Another feature of optimal learning environments we observed was cognitive apprenticeship, in which the teacher modeled and made explicit his thinking processes with respect to complex problem solving. The overall function of these simultaneous conditions was to create strong scripts or prescriptions for directing student action. Simultaneously, students felt emotionally supported through a positive relational tone often created by very subtle uses of positive feedback and affirmation, expressions of student interest, and uses of humor.

The teacher, class, and school subject were a highly influential "mega-factor" in the study, which we sought to account for statistically, but without the ability to disentangle the distinct effect of each factor.[1] We used school subject, representing the six subjects in the seven observed classes, as the class/subject/teacher "mega-factor." School was another overlapping factor, but one that was also accounted for by the school subject variable control since two subjects were taught in one school and four in the other.

The structure of the data was nested due to multiple dependencies within it.[2] Therefore, multilevel models (or HLM; Bryk and Raudenbush 2002) were used for analyses.[3]

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[1] Several class-level variables were highly overlapping, because the seven classes observed were all different subjects (with one exception—two were English), and all subjects were taught by different teachers, with one exception (one teacher taught both class in sociology and geography). Because we considered the two English classes taught by the same teacher to be similar, we believed the school subject variable was the simplest and most comprehensive variable to account for the effect of class, subject, and teacher collectively. We hope to be able to disentangle the independent effects of each in future studies collecting more data.

[2] For example, there were self-reports about the same classroom situation at the same point in time from different students. Therefore, each self-report was not independent on the other. Classroom situations at these time points were a source of dependency, and there were others as well; see Shernoff et al. (2011) for a fuller discussion of how nestedness was conceptualized in this study.

[3] In this statistical modeling, self-reports of all of the students' in the class were "nested" within each instructional episode when the ESM signal was given, and the classroom climate of the learning environment during that episode was rated. These models partitioned the variance in engagement into a "within-episode" component, meaning different student reporters about the same instructional episode (referred to as level 1), and a "between-episode" component (i.e., level 2), meaning the average difference in engagement a classroom reported from one instructional situation to the next. This allowed us to examine the average engagement between instructional episodes as a function of the attributes of the learning environment, as well as the individual variation within each instructional episode as a function of the personal characteristics of the student reporters.

The Results

Preliminary analyses revealed that some combination of teacher, class, subject, and school factors (i.e., the subject variable or "mega-factor" accounting for these variables in the study) exerted a large influence over average class engagement among instructional episodes, accounting for 60 % of the variation in engagement among them (see Shernoff et al. 2011).

The dimensions of the learning environment as rated on the OLE-OLA were highly predictive of engagement. Together, the dimensions of the learning environment and classroom climate as rated on the OLE-OLA accounted for 83 % of the variation in average engagement among instructional episodes. We also analyzed each dimension separately while controlling for the effects of class/subject/teacher (i.e., again, using the subject variable) and the effect of person-level characteristics. Person-level controls included grade level, gender, race/ethnicity, low SES, grade in course, and honors student. Results revealed that our global rating of environmental complexity (combination of environmental challenge and support) was a positive predictor of engagement after controls ($B = 0.21$, $t = 2.60$, $p < .05$). Next, global ratings for environmental support and environmental challenge were each tested.

Both, environmental support and environmental challenge were positively related to engagement ($B = 0.30$, $t = 2.48$, $p < .05$; $B = 0.16$, $t = 2.50$, $p < .05$; respectively).

Five dimensions may conceptually be considered to be components of a supportive learning environment: motivation support, positive relationships, interactivity, feedback, and activity level. Five are conceptually more related to a challenging environment: task importance, complex tasks, clear goals, assessment, and conceptual/language development. Interestingly, the five support dimensions and five challenge dimensions formed composite scales with high reliabilities (=.81 for the support composite and =.82 for the challenge composite), supporting the premise of an underlying construct for each. One remaining dimension, teacher effectiveness, would appear to be important for both a challenging and supportive environment and, therefore, was conceptually neutral. The support scale was a significant predictor of engagement ($B = 0.24$, $t = 2.11$, $p < .05$); but the challenge scale was not.

When testing these more specific dimensions, those that were positively related to engagement included support for motivation ($B = 0.18$, $t = 2.51$, $p < .05$), positive relationships ($B = 0.37$, $t = 2.90$, $p < .01$), task importance ($B = 0.30$, $t = 3.97$, $p < .01$), and clear goals ($B = 0.18$, $t = 2.20$, $p < .05$). Positive relationships and the teacher's direct role were significant predictors only when removing the control for class/subject/teacher ($B = 0.52$, $t = 2.58$, $p < .05$; $B = 0.28$, $t = 2.91$, $p < .01$; respectively). It makes intuitive sense that positive relations and the teachers' direct role were accounted for by the influence of the class or teacher. In fact, the effect of positive relations was almost entirely accounted for by controlling on class/subject/teacher.

Results are illustrated in Table 7.1. In the table, challenge dimensions, including the global rating for environmental challenge, appear on the left side of the table and support dimensions on the right side. Significant predictors are bolded.

Table 7.1 Significant and nonsignificant dimensions of the learning environment predicting engagement

Environmental complexity (global rating)*	
Teacher effectiveness*†	
Challenge dimension (global rating)	**Support dimension (global rating)***
Challenge composite (α = *.82*)	***Support composite*** (α = *.81*)*
Task Importance**	**Motivational support***
Complex tasks (e.g., with materials)	**Positive relationships**†**
Clear goals*	Interactivity
Assessment	Feedback
Conceptual/language development	Activity level

Note. Significant predictors are set in bold. *$p < .05$; **$p < .10$, † Significant only after removing control for class/subject/teacher

Environmental Complexity and Optimal Learning Environments

As hypothesized, the learning environment was extremely operative for shaping students' immediate level of student engagement in the classroom. The global rating for environmental complexity was a significant predictor of student engagement as hypothesized. Interestingly, environmental support—both the global rating as well as several of its component dimensions—was found to be positively related to engagement. Components of environmental support predicting engagement included support for positive relationships, and feedback motivation and positive relationships. Dimensions thought to be components of environmental challenge such as importance and clear goals were significant predictors. The sample size was not large enough to detect all significant effects. Overall, findings were suggestive that the learning environment, and environmental complexity in particular, has a major influence on the engagement of students in traditional public school classrooms.

A classroom environment of belongingness and participation fostering strong relationships among students and the teacher was predictive of student engagement in high school classrooms. This supports the notion that classrooms are relational zones in which pedagogical caring and the quality of relationships play an integral role in students' motivation to learn and succeed (Furrer and Skinner 2003). Not surprisingly, this effect was highly associated with the specific class and teacher creating these zones. When students feel secure, special, and important in their relationships, this triggers positive emotions like interest and enthusiasm. They become more likely to discuss their work and use self-regulatory strategies in a class climate of mutual respect and emotional support. Oppositely, when feeling unconnected, students are more likely to feel bored, worried, or frustrated and struggle to become constructively involved in activities.

The teacher's direct role beyond shaping the learning environment was found to be another dimension related to engagement, and yet, for all of the time teachers spend preparing for this role, it is interesting to consider that their direct role in managing the classroom, time, and activities may not even be as salient of a factor in students' engagement as their role in creating a motivational and relational environment in the classroom. In addition to managing the class, therefore, the teacher needs to demonstrate and model a degree of *emotional understanding*, a tacit form of understanding in which they empathize with student's situations, circumstances, and predicaments, and also use this understanding to make instructional decisions (Downs and Smith 2004; Hargreaves 2000; Hargreaves et al. 2001; Orange 1995; Warren et al. 2008). When children feel emotionally supported and understood, they demonstrate a propensity to adopt an attitude of excitement, fun, and interest in learning. This makes clear that a large factor in student engagement is simply students' desire to be in the presence of the teacher and classmates—their comfort with being where they are—which is typically a direct function of relationship quality. Essentially, when teachers showed interest in the students as opposed to adopting a functional relationship as a mere evaluator of them, students are more likely to feel comfortable in, interact with, and absorb what is available in the environment. This reaction is an interactive one, as teachers may become emotionally involved and attached with students as well (Meyer 2009).

Overall, student and teacher engagement did appear to be a highly interactive process. Although teaching and learning have traditionally been studied as separate processes (Kunter et al. 2008; Shuell 1993), in reality, teachers and students co-create the pattern of classroom interactions together—which, in turn, impacts both teacher and student motivation (Turner and Warzon 2009). Although teachers do exert more control than students over the content and process of activities, and can greatly impact the relational environment, the nature in which students and teachers engage each other in a cyclical interaction greatly influences both the students' and the teacher's motivation.

Despite some unique advantages of the method used in the study presented in this chapter, the potential for future applications may be far greater. The combination of the ESM with video techniques proved to be an effective technique for accounting for the dynamic nature of the classroom and discovering the relationship between instructional practices, the learning environment, engagement, and other student perceptions. The type of hypotheses able to be tested using this methodology in the future is numerous. The video data alone provided a wealth of information, with each videotape containing a large amount of data that can be coded and recoded in different ways. Together, the ESM and video data can make possible an in-depth investigation into classroom dynamics and students proximal reactions to them. Future studies may utilize similar methods in implementing theory-based interventions rather than studying only samples of ordinary instruction in typical public school classes. Even more important is the potential to apply such methods to determine the extent of variation not only within and between public schools but also private and alternative schools as well as after-school learning environments.

Conclusion

Increasingly, young people feel disconnected and disengaged. The findings discussed in this chapter suggest that to engage students in learning, educators should focus on developing a sense of community, belongingness, and connection through supportive relationships, and reducing the relational emphasis on teacher authority. When students are made to feel that their teachers believe in them and their capabilities, their self-esteem and confidence in successfully reaching their goals is strengthened (Shernoff 2001). This is achieved through appropriate praise and encouragement, celebrating personal achievements, speaking authentically about students' strengths, and modeling humility. When these are the active elements of the learning environment, the virtues and exemplary characteristics of others become a source of inspiration rather than competition. Unfortunately, there is a mismatch between what research shows and what educational policies demand. Research strongly supports the wisdom of a new and different approach to school that puts relationships at the center (Smyth and Fasoli 2007). Studies such as those discussed in this chapter suggest that rather than focusing exclusively on course content or the quantity of student participation, educators would profitably focus on the *quality* of classroom experiences via supportive interactions and positive classroom climate.

Appendix

Coding categories and subcomponents of the Optimal Learning Environments—Observational Log and Assessment (OLE-OLA)

Characteristics
1. ***Environmental complexity:*** combines environmental challenge (e.g., high task challenge and expectations for mastery) with supportiveness (e.g., relationship, emotional, and motivational support)
Challenge dimension
High expectations for competence, effort, commitment, and performance
Task challenge or rigor; academic press
Mastery orientation
Optimal challenge
Appropriate structure
Support dimension
Competency support (e.g., teaching for understanding)
Opportunities for using skills and mastering tasks; high degree of skill used
Support for self-efficacy
Interpersonal/emotional support
Positive emotional climate and democratic environment
Cohesiveness, unity, and solidarity
Support for individuality and diversity
Support for motivation and engagement (see #2 below)

(continued)

Other elements that are often present:

2. *Support for motivation and engagement*
   - Autonomy support
   - Support for interest development
   - Support for intrinsic motivation:
   - Supports flow (beyond optimal challenge) and group flow
3. *Importance of activity*
   - Importance or relevance of the activity is clarified or understood
   - Real-world problem; facilitating a sense of purpose
   - Real-world simulation or scenario
   - Experiential learning: problem-based learning, project or service learning; serving the students' school or community
4. *Complex, situated tasks*
   - Solving problems or fashioning products
   - Use of domain-specific materials and tools
   - Activities provoke inquiry or exploration
   - Use of technology
5. *Positive relationships*
   - Every student is/feels respected, well regarded
   - Positive student-teacher relations or rapport
   - Student peer relations or rapport
   - Positive communications (praise, affection, encouragement)
   - No negative interactions (sarcasm, disrespect, harsh disagreement)
6. *Clear goals*
   - Goals of the activity are made clear
   - Activities are related to learning goals/goals in course
   - Activities relate to real life or adaptive goals
   - Career/future goals
   - Opportunities for personal development, and pursuing goals important to the self
7. *Interactivity and transactional learning*
   - Interactivity among teacher and students
   - Every student has a role within the instructional/social system
   - Students work cooperatively
   - Opportunities for intellectual contributions
   - Opportunities for initiative and leadership
   - Opportunities to make valued contribution
   - Opportunities to value others
   - Knowledge building and creation (students contribute, explain, and evaluate ideas, contributing to shared knowledge)
   - Active negotiating and consensus building
   - Students have a say in class activities
8. *Feedback*
   - Feedback from instructor
   - Feedback from peers
   - Feedback is informational and accurate
   - Positive feedback
   - Scaffolding

(continued)

9. *Activity level*
   - Physically active
   - Mentally active
10. *Assessment*
   - Assessment is clear or understood
   - Assessment based on learning goals
   - Normative assessments
   - Alternative assessments (e.g., performance assessment, portfolios, self-assessments)
   - Self-regulation and life/adaptive/social/emotional skills are assessed
   - Assessment of current knowledge to gauge ability level for future activities and challenges
   - Assessment results provide valuable feedback (e.g., opportunities to learn and/or correct mistakes)
11. *Teacher's direct role/management* (*beyond facilitating the learning environment*)
   - Keeps class safe
   - Keeps class from becoming out of control
   - Sets limits as needed, redirection of misbehavior
   - Orderly transitions
   - Is prepared
   - Time management: manages activities and routines/maximizes work time
   - Clear rules, regulations, and procedures
   - Personally involved—friendly, caring enjoys being with students; provides time, attention, energy
   - Awareness of and responsiveness to student needs and differences
   - Regard for diverse students' perspectives
   - Effective direct facilitation of instructional activities
   - Uses multiple and varied instructional formats (e.g., small group, presentation, videos, and discussions)
   - Use of multiple learning modalities and materials (e.g., supports visual, auditory, and kinesthetic learning)
   - Encourages/facilitates high-level and meaning-making discourse
   - Facilitates self-identification of goals, learning strategies, self-regulation, monitoring
   - Provides instructional support: instruction-related help, varies instruction according to needs
   - Availability/dependability
12. *Concept and language development*
   - Frequent/skillful questioning of students
   - Presence of analysis and reasoning (e.g., higher-order thinking, open-ended questions, taking students' ideas seriously)
   - Expert modeling/cognitive apprenticeship
   - Conceptual and knowledge development—providing useful information and concepts
   - Opportunities to learn general rules/abstract principles/theory
   - Opportunities to apply general rules to other specific and varied contexts/synthesize information/discover patterns; discovery learning
   - Presence of language development (frequent conversations, high quality of discourse, use of "uptake")
   - Academic language development (sophisticated, domain-specific language, e.g., talking like a scientist, meaning-making discourse)
   - Activities build in students present knowledge
   - Activities require students to plan ahead, strategies, or anticipate others
   - Opportunities for practice and development of mastery (including homework)

References

Allodi, M. W. (2010). The meaning of social climate of learning environments: Some reasons why we do not care enough about it. *Learning Environments Research, 13*(2), 89–104.

American Psychological Association. (1997). *Learner-centered psychological principles: A framework for school redesign and reform*. http://www.cdl.org/resource-library/articles/learner_centered.php. Accessed 13 Oct 2010.

Anderson, A., Christenson, S. L., Sinclair, M. F., & Lehr, C. A. (2004). Check & connect: The importance of relationships for promoting engagement with school. *Journal of School Psychology, 42*, 95–113. doi:10.1016/j.jsp.2004.01.002.

Battistich, V., Solomon, D., Watson, M., & Schaps, E. (1997). Caring school communities. *Educational Psychologist, 32*(3), 137–151.

Baumrind, D. (1971). *Current patterns of parental authority*. Washington, DC: American Psychological Association.

Baumrind, D. (1989). Rearing competent children. In W. Damon (Ed.), *Child development today and tomorrow*. San Francisco: Jossey-Bass.

Birch, S. H., & Ladd, G. W. (1997). The teacher-child relationship and children's early school adjustment. *Journal of School Psychology, 35*(1), 61–79.

Brophy, J. E., & Good, T. L. (1986). Teacher behavior and student achievement. In M. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 328–375). London: Collier Macmillan.

Brown, A. L., & Campione, J. C. (1994). Guided discovery in a community of learners. In K. McGilly (Ed.), *Classroom lessons: Integrating cognitive theory and classroom practice*. Cambridge, MA: MIT Press/Bradford Books.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42.

Bryk, A. S., & Raudenbush, S. W. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks: Sage.

Buhs, E. S., & Ladd, G. W. (2001). Peer rejection as an antecedent of young children's school adjustment: An examination of mediating processes. *Developmental Psychology, 37*(4), 550–560.

Burchinal, M. R., Peisner-Feinberg, E., Pianta, R., & Howes, C. (2002). Development of academic skills from preschool through second grade: Family and classroom predictors of developmental trajectories. *Journal of School Psychology, 40*(5), 415–436.

Cavanagh, R. F., & Shernoff, D. J. (in preparation). The validity of the Optimal Learning Environments – Observational Log and Assessment (OLE-OLA): A Rasch model analysis.

Chen, J. J.-L. (2005). Relation of academic support from parents, teachers, and peers to Hong Kong adolescents' academic achievement: The mediating role of academic engagement. *Genetic, Social, and General Psychological Monographs, 131*, 77–128.

Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *Self processes and development* (The Minnesota symposium on child psychology, Vol. 23, pp. 43–77). Hillsdale: Erlbaum.

Cross, S. E., & Markus, H. (1991). Possible selves across the life-span. *Human Development, 34*(4), 230–255.

Cross, S. E., & Markus, H. R. (1994). Self-schemas, possible selves, and competent performance. *Journal of Educational Psychology, 86*(3), 423–438.

Darling-Hammond, L. (2002). *Redesigning schools: What matters and what works*. San Francisco: School Redesign Network at Stanford University.

Davidson, A. L., & Phelan, P. (1999). Students' multiple worlds. In *Advances in motivation and achievement: Role of context* (Vol. 2, pp. 233–283). Stamford: JAI Press.

Davidson, A. J., Gest, S. D., & Welsh, J. A. (2010). Relatedness with teachers and peers during early adolescence: An integrated variable-oriented and person-oriented approach. *Journal of School Psychology, 48*(6), 483–510.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior* (Perspectives in social psychology). New York: Plenum.
Downs, A., & Smith, T. (2004). Emotional understanding, cooperation, and social behavior in high-functioning children with autism. *Journal of Autism and Developmental Disorders, 34*(6), 625–635.
Eccles, J. S., & Gootman, J. A. (2002). *Community programs to promote youth development*. Washington, DC: National Academy Press.
Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., et al. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist, 48*(2), 90–101.
Erikson, E. H. (1968). *Identity: Youth, and crisis* (1st ed.). New York: Norton.
Erikson, E. H. (1980). *Identity and the life cycle*. New York: Norton.
Fletcher, S. (2007). Mentoring adult learners: Realizing possible selves. *New Directions for Adult and Continuing Education, 114*, 75–86.
Ford, M. E. (1992). *Motivating humans: Goals, emotions, and personal agency beliefs*. Newbury Park: Sage.
Fraser, B. J. (1998). Classroom environment instruments: Development, validity and applications. *Learning Environments Research, 1*(1), 7–33.
Fraser, B. J., & Fisher, D. L. (1982). Predicting students' outcomes from their perceptions of classroom psycho-social environment. *American Educational Research Journal, 19*(4), 498–518.
Furlong, M. J., Whipple, A. D., St. Jean, G., Simental, J., Soliz, A., & Punthuna, S. (2003). Multiple contexts of school engagement: Moving toward a unifying framework for educational research and practice. *The California School Psychologist, 9*, 99–114.
Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology, 95*(1), 148–162.
Furrer, C., & Skinner, E. (2009, April). *Reciprocal effects of student engagement in the classroom on changes in teacher support over the school year.* Paper presented at the biennial meeting of the Society for Research in Child Development, Denver.
Galini, R., & Efthymia, P. (2009). Dimensions of the classroom climate, as perceived by the students, related to their teachers' evaluation approach on their overall performance in a Greek primary school sample. *New Horizons in Education, 57*(2), 109–120.
Garcia-Reid, P. (2007). Examining social capital as a mechanism for improving school engagement among low income Hispanic girls. *Youth & Society, 39*, 164–181. doi:10.1177/0044118x07303263.
Gardner, H., Csikszentmihalyi, M., & Damon, W. (2001). *Good work: When excellence and ethics meet*. New York: Basic Books.
Gilman, R., Huebner, E. S., & Furlong, M. J. (Eds.). (2009). *Handbook of positive psychology in schools*. New York: Routledge.
Green, G., Rhodes, J., Hirsch, A. H., Suarez-Orozco, C., & Camic, P. M. (2008a). Supportive adult relationships and the academic engagement of Latin American immigrant youth. *Journal of School Psychology, 46*(4), 393–412.
Green, G., Rhodes, J. E., Hirsch, A. H., Suarez-Orozco, C., & Camic, P. M. (2008b). Supportive adult relationships and the academic engagement of Latin American immigrant youth. *Journal of School Psychology, 46*, 393–412. doi:10.1016/j.jsp.2007.07.001.
Hargreaves, A. (2000). Mixed emotions: Teachers' perceptions of their interactions with students. *Teaching and Teacher Education, 16*(8), 811–826.
Hargreaves, A., Earl, L., Moore, S., & Manning, S. (2001). *Learning to change: Teaching beyond subjects and standards*. San Francisco: Jossey-Bass.
Herrera, C., Sipe, C. L., & McClanahan, W. S. (2000). *Mentoring school-age children: Relationship development in community-based and school-based programs* (p. 51). Philadelphia: Public/Private Ventures.
Hudley, C., Daoud, A., Polanco, T., Wright-Castro, R., & Hershberg, R. (2003, April). *Student engagement, school climate, and future expectations in high school*. Paper presented at the biennial meeting for the Society of Research in Child Development, Tampa Bay.

Hughes, J. N., & Kwok, O.-m. (2007). Influence of student-teacher and parent-teacher relationships on lower achieving readers' engagement and achievement in the primary grades. *Journal of Educational Psychology, 99*(1), 39–51.

Hughes, J. N., Zhang, D., & Hill, C. R. (2006). Peer assessments of normative and individual teacher-student support predict social acceptance and engagement among low-achieving children. *Journal of School Psychology, 43*(6), 447–463.

Johnson, J. (1997). *Getting by: What American teenagers really think about their schools* (p. 54). New York: Public Agenda.

Kalil, A., & Ziol-Guest, K. M. (2008). Teacher support, school goal structures, and teenage mothers' school engagement. *Youth & Society, 39*(4), 524–548.

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*(7), 262–273.

Kunter, M., Tsai, Y.-M., Klusmann, U., Brunner, M., Krauss, S., & Baumert, J. (2008). Students' and mathematics teachers' perceptions of teacher enthusiasm and instruction. *Learning and Instruction, 18*(5), 468–482.

Ladd, G. W., Birch, S. H., & Buhs, E. S. (1999). Children's social and scholastic lives in kindergarten: Related spheres of influence? *Child Development, 70*(6), 1373–1400.

Langhout, R. D., Rhodes, J. E., & Osborne, L. N. (2004). An exploratory study of youth mentoring in an urban context: Adolescents' perceptions of relationship styles. *Journal of Youth and Adolescence, 33*(4), 293.

Larson, S. C. (2011). *The effects of academic literacy instruction on engagement and conceptual understanding of biology in ninth grade students*. Unpublished doctoral dissertation, Aurora University, Aurora.

Levinson, D. J. (1978). *Seasons of a man's life*. New York: Knopf.

Li, Y., Lerner, J. V., & Lerner, R. M. (2010). Personal and ecological assets and academic competence in early adolescence: The mediating role of school engagement. *Journal of Youth and Adolescence, 39*, 801–815. doi:10.1007/s10964-010-9535-4.

Marchand, G. (2011, April). *Student autonomy over the middle school transition: Effects of teacher support and influences on engagement.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Marchant, G. J., Paulson, S. E., & Rothlisberg, B. A. (2001). Relations of middle school students' perceptions of family and school contexts with academic achievement. *Psychology in the Schools, 38*(6), 505–519.

Markowitz, E. S., Deutsch, N. L., & Lawrence, E. C. (in press). Balancing skills and challenges: Exploring the concept of relational engagement in combined group and one-on-one mentoring for adolescent girls. In D. J. Shernoff, & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbooks by Teachers College Record.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*(9), 954–969.

Martin, A. J., & Dowson, M. (2009). Interpersonal relationships, motivation, engagement, and achievement: Yields for theory, current issues, and educational practice. *Review of Educational Research, 79*(1), 327–365.

Meyer, D. K. (2009, April). *Acts of caring as motivation for teaching.* Paper presented at the annual meeting of the America Educational Research Association, San Diego.

Meyer, D. K., & Turner, J. C. (2007). Scaffolding emotions in classrooms. In P. A. Schutz & R. Pekrun (Eds.), *Emotion in education* (pp. 243–258). Burlington: Elsevier.

Midgley, C., Feldlaufer, H., & Eccles, J. S. (1989). Change in teacher efficacy and student self- and task-related beliefs in mathematics during the transition to junior high school. *Journal of Educational Psychology, 81*(2), 247–258.

Mitchell-Copeland, J., Denham, S. A., & DeMulder, E. K. (1997). Q-sort assessment of child-teacher attachment relationships and social competence in preschool. *Early Education and Development, 8*(1), 27–39.

Moje, E. B. (1996). "I teach students, not subjects": Teacher-student relationships as contexts for secondary literacy. *Reading Research Quarterly, 31*(2), 172–195.

Murdock, T. B., & Miller, A. (2003). Teachers as sources of middle school students' motivational identity: Variable-centered and person-centered analytic approaches. *The Elementary School Journal, 103*(4), 383–399.

Nakamura, J., & Shernoff, D. J. (2009). *Good mentoring: Fostering excellent practice in higher education*. San Francisco: Jossey-Bass.

Noam, G. G., & Fiore, N. (2004). Relationships across multiple settings: An overview. *New Directions for Youth Development, 103*, 9–16.

Noddings, N. (2003). *Happiness and education*. Cambridge: Cambridge University Press.

Opolot-Okurut, C. (2010). Classroom learning environment and motivation towards mathematics among secondary school students in Uganda. *Learning Environments Research, 13*(3), 267–277.

Orange, D. M. (1995). *Emotional understanding: Studies in psychoanalytic epistemology*. New York: The Guilford Press.

Osterman, K. F. (2000). Students' need for belonging in the school community. *Review of Educational Research, 70*(3), 323–367.

Oyserman, D., & Markus, H. (1990). Possible selves in balance: Implications for delinquency. *Journal of Social Issues, 46*(2), 141–157.

Oyserman, D., Bybee, D., Terry, K., & Hart-Johnson, T. (2004). Possible selves as roadmaps. *Journal of Research in Personality, 38*(2), 130–149.

Paavola, S., Lipponen, L., & Hakkarainen, K. (2004). Models of innovative knowledge communities and three metaphors of learning. *Review of Educational Research, 74*(4), 557–576.

Palincsar, A. S., & Herrenkohl, L. R. (1999). Designing collaborative learning contexts. *Theory into Practice, 41*(1), 26–32.

Patrick, H., Ryan, A. M., & Kaplan, A. (2007). Early adolescents' perceptions of the classroom social environment, motivational beliefs, and engagement. *Journal of Educational Psychology, 99*(1), 83–98.

Pianta, R. C., & Allen, J. P. (2008). Building capacity for positive youth development in secondary school classrooms: Changing teachers' interactions with students. In M. Shinn & H. Yoshikawa (Eds.), *Toward positive youth development: Transforming schools and community programs* (pp. 21–39). Oxford, UK: Oxford University Press.

Pianta, R. C., Nimetz, S. L., & Bennett, E. (1997). Mother-child relationships, teacher-child relationships, and school outcomes in preschool and kindergarten. *Early Childhood Research Quarterly, 12*(3), 263–280.

Pianta, R. C., La Paro, K. M., & Hamre, B. K. (2008). *Classroom assessment scoring system: Manual K-3*. Baltimore: Paul H. Brookes Publishing.

Plimmer, G., & Schmidt, A. (2007). It's who you want to be, not what you want to do. *New Directions for Adult and Continuing Education, 114*, 61–74.

Rathunde, K. (1996). Family context and talented adolescents' optimal experience in school-related activities. *Journal of Research on Adolescence, 6*(4), 605–628.

Rayyes, N. (2011, April). *Student sense of belonging in the context of small learning communities.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Reddy, R., Rhodes, J. E., & Mulhall, P. (2003). The influence of teacher support on student adjustment in the middle school years: A latent growth curve study. *Development and Psychopathology, 15*, 119–138. doi:10.1017/s0954579403000075.

Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and Emotion, 28*(2), 147–169.

Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., et al. (1997). Protecting adolescents from harm: Findings from the national longitudinal study on adolescent health. *Journal of the American Medical Association, 278*(10), 823–832.

Rhodes, J. E. (2002). *Stand by me: The risks and rewards of mentoring today's youth*. Cambridge, MA: Harvard University Press.

Rhodes, J. E. (2004). The critical ingredient: Caring youth-staff relationships in after-school settings. *New Directions for Youth Development, 101*, 145–161.

Roeser, R. W., & Eccles, J. S. (1998). Adolescents' perceptions of middle school: Relation to longitudinal changes in academic and psychological adjustment. *Journal of Research on Adolescence, 8*(1), 123–158.

Roeser, R. W., Midgley, C., & Urdan, T. C. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. *Journal of Educational Psychology, 88*(3), 408–422.

Roeser, R. W., Eccles, J. S., & Sameroff, A. J. (1998). Academic and emotional functioning in early adolescence: Longitudinal relations, patterns, and prediction by experience in middle school. *Development and Psychopathology, 10*(2), 321–352.

Roeser, R. W., Eccles, J. S., & Sameroff, A. J. (2000). School as a context of early adolescents' academic and social-emotional development: A summary of research findings. *The Elementary School Journal, 100*(5), 443–471.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in a social context*. New York: Oxford University Press.

Rogoff, B. (1995). Development through participation in sociocultural activity. *New Directions for Child Development, 67*, 45–65.

Rogoff, B. (2003). *The cultural nature of human development*. Oxford: Oxford University Press.

Roorda, D. L., Koomen, H. M. Y., & Oort, F. J. (2009, April). *The influence of teacher-student relationships on students' school engagement and achievement: A meta-analytic perspective.* Paper presented at the biennial meeting of the Society for Research on Child Development, Denver.

Ryan, A. M. (2000). Peer groups as a context for the socialization of adolescents' motivation, engagement, and achievement in school. *Educational Psychologist, 35*(2), 101–111.

Ryan, A. M., & Patrick, H. (2001). The classroom social environment and changes in adolescents' motivation and engagement during middle school. *American Educational Research Journal, 38*(2), 437–460.

Ryan, R. M., Stiller, J. D., & Lynch, J. H. (1994). Representations of relationships to teachers, parents, and friends as predictors of academic motivation and self-esteem. *Journal of Early Adolescence, 14*(2), 226–249.

Sanchez, B., Colon, Y., & Esparza, P. (2005). The role of sense of school belonging and gender in the academic adjustment of Latino adolescents. *Journal of Youth and Adolescence, 34*(6), 619–628.

Scardamalia, M. (1989). Computer-supported intentional learning environments. *Journal of Educational Computing Research, 5*(1), 51–68.

Sharkey, J. D., You, S., & Schnoebelen, K. (2008). Relations among school assets, individual resilience, and student engagement for youth grouped by level of family functioning. *Psychology in the Schools, 45*, 402–418. doi:10.1002/pits.20305.

Shernoff, D. J. (2001). *The individual-maker: A master teacher and his transformational curriculum*. Palm Desert: William & Sons.

Shernoff, D. J. (2010). *The experience of student engagement in high school classrooms: Influences and effects on long-term outcomes*. Saarbruken: Lambert Academic.

Shernoff, D. J. (2012). Engagement and positive youth development: Creating optimal learning environments. In K. R. Harris, S. Graham, & T. Urdan (Eds.), *The APA educational psychology handbook* (Vol. 3, pp. 195–220). Washington, DC: American Psychological Association.

Shernoff, D. J., Tonks, S., Anderson, B., & Dortch, C. (2011, April). *Linking instructional practices with student engagement from moment to moment in high school classrooms.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Shuell, T. J. (1993). Toward an integrated theory of teaching and learning. *Educational Psychologist, 28*(4), 291–311.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*(4), 571–581.

Skinner, E. A., Connell, J. P., & Zimmer-Gembeck, M. J. (1998). Individual differences and the development of perceived control. *Monographs of the Society for Research in Child Development, 63*(2–3), 1–220.

Smyth, J., & Fasoli, L. (2007). Climbing over the rocks in the road to student engagement and learning in a challenging high school in Australia. *Educational Research, 49*(3), 273–295.

Solomon, D., Battistich, V., Watson, M., Schaps, E., & Lewis, C. (2000). A six-district study of educational change: Direct and mediated effects of the child development project. *Social Psychology of Education, 4*(1), 3–51.

Steinberg, L., Brown, B. B., & Dornbusch, S. M. (1996). *Beyond the classroom: Why school reform has failed and what parents need to do*. New York: Simon & Schuster.

Tucker, C. M., Zayco, R. A., Herman, K. C., Reinke, W. M., Trujillo, M., Carraway, K., et al. (2002). Teacher and child variables as predictors of academic engagement among low-income African American children. *Psychology in the Schools, 39*(4), 477–488.

Turner, J. C. (2010, May) *Understanding classroom research and its contributions to our understanding of motivation to learn.* Paper presented at the annual meeting of the American Educational Research Association, Denver.

Turner, J. C., & Warzon, K. B. (2009, April). *Pathways to teacher motivation: The outcomes of teacher-student interaction.* Paper presented at the annual meeting of the American Educational Research Association, San Diego.

Turner, J. C., Midgley, C., Meyer, D. K., Gheen, M., Anderman, E. M., Kang, Y., et al. (2002). The classroom environment and students' reports of avoidance strategies in mathematics: A multimethod study. *Journal of Educational Psychology, 94*(1), 88–106.

Turner, J. C., Meyer, D. K., Midgley, C., & Patrick, H. (2003). Teacher discourse and sixth graders' reported affect and achievement behaviors in two high-mastery/high-performance mathematics classrooms. *The Elementary School Journal, 103*(4), 357–382.

Urdan, T. C., & Schoenfelder, E. (2006). Classroom effects on student motivation: Goal structures, social relationships, and competence beliefs. *Journal of School Psychology, 44*, 331–349. doi:10.1016/j.jsp.2006.04.003.

Urdan, T. C., & Turner, J. C. (2005). Competence motivation in the classroom. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 297–317). New York: Guilford.

Valeski, T. N., & Stipek, D. J. (2001). Young children's feelings about school. *Child Development, 72*(4), 1198–1213.

Voelkl, K. E. (1995). School warmth, student participation, and achievement. *The Journal of Experimental Education, 63*(2), 127–138.

Warren, H. K., Denham, S. A., & Bassett, H. H. (2008). The emotional foundations of social understanding. *Zero to Three, 28*(5), 32–39.

Way, N., Reddy, R., & Rhodes, J. E. (2007). Students' perceptions of school climate during the middle school years: Associations with trajectories of psychological and behavioral adjustment. *American Journal of Community Psychology, 40*, 194–213. doi:10.1007/s10464-007-9143-y.

Weinstein, C. S. (1998). "I want to be nice, but i have to be mean": Exploring prospective teachers' conceptions of caring and order. *Teaching and Teacher Education, 14*, 153–163.

Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology, 89*(3), 411–419.

Wentzel, K. R. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology, 90*(2), 202–209.

Wentzel, K. R. (2002). Are effective teachers like good parents? Teaching styles and student adjustment in early adolescence. *Child Development, 73*(1), 287–301.

Wentzel, K. R. (2009). Students' relationships with teachers as motivational contexts. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 301–322). New York: Routledge.

Woolley, M. E., & Bowen, G. L. (2007). In the context of risk: Supportive adults and the school engagement of middle school students. *Family Relations, 56*(1), 92–104.

Zedan, R. (2010). New dimensions in the classroom climate. *Learning Environments Research, 13*(1), 75–88.

Zhang, J., Scardamalia, M., Reeve, R., & Messina, R. (2009). Designs for collective cognitive responsibility in knowledge-building communities. *The Journal of the Learning Sciences, 18*(1), 7–44.

Zhao, C.-M., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education, 45*(2), 115–138.

Zimmerman, M. A., & Bingenheimer, J. B. (2002). Natural mentors and adolescent resiliency: A study with urban youth. *American Journal of Community Psychology, 30*(2), 221–243.

Chapter 8
Connecting to "The What": Engaging Approaches to Traditional Subject Matter

Introduction

There is a practical question that emerges when discussing engagement, especially by teachers who of course want their students to be engaged. Understandably, they frequently wonder: "Sure, I understand how you can engage students in say, science, but how can *my subject* be taught in an engaging way?" Here, *my subject* may be any of the traditional subject matters, including English, math, science, social studies, history, or others.

It is a legitimate question. Some subjects seem to loan themselves to engaging pedagogy more so than others. For example, by its nature, the experimental methods integral to the scientific approach makes science labs inherently compatible with a "discovery approach" to learning. Meanwhile, a similar approach in English or history may seem more elusive. While a detailed discussion of engagement in each subject would be prohibitive within the confines of this chapter, it is worth identifying and describing several examples where innovative approaches serve to engage students in learning. First, however, it is crucial to reflect further on the "what" of engagement in learning. That is, "what," exactly is it that we want adolescent youth to be engaged with when it comes to their education and their learning? A five-stage model of engagement with learning is presented as a useful heuristic for the forms of content with which individuals engage at each stage of development. Examples of engaging approaches to the core academic subjects are then presented in this chapter; examples from nonacademic subjects like art and vocational education are then discussed in Chap. 9.

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Engaging in What?

Dewey (1943/1990) conceived of the school as, ideally, a center of community life as opposed to a hub in which distinct subjects are taught. He believed that work in wood, metal, weaving, sewing, cooking, and other crafts emerge naturally as necessities of living and learning in the home; however, he believed the major reason that school was not organized as a unit of social activity was that the element of common and productive activity was missing. When the purpose of schooling is conceptualized merely in terms of future preparation, conditions for an authentic social spirit, while not always easy to describe, are constantly and "imminently wanting" (p. 14). The mere absorption of facts and knowledge, he believed, was "so exclusively an individual affair" that it bordered on selfishness (p. 15). Compared to the rigidity of schooling when the activities are so organized, the difference in motive, spirit, and atmosphere when performing authentic activities of community life are not necessarily easy to describe but the "buoyant outgoing energy is so obvious as to fairly strike one in the face" (p. 15). This difference of which Dewey spoke over 100 years ago is still reflected by the difference in social spirit, cooperation, and community life between many academic classes and other types of settings in which learning occurs today, including structured after-school programs.

For Dewey, traditional subjects represent the information and culture which adults believe is important to transmit to the younger generation. Dewey would not deny the importance of this transmission process. He would disagree, however, with the method of doing so directly. This is because when teaching "subjects" directly, as products to be delivered, they are organized and taught in isolation from each other not existing in full organic connection with each other. Thus, Dewey believed that the system of organization the schools adopted was inconsistent with the experience of students. Dewey wrote more concretely: "Things do not come to the individual pigeonholed" (Dewey 1943/1990, p. 184).

There are other equally important sources of separation that Dewey believed comprised of waste in education, such as that of the school from the home and society, grade levels from the content taught within them, and different schools with students of different ages from each other. Another important separation was that between the present and future, which occurs when present experience is relegated to function only as prerequisite knowledge or skills needed in the distant future. Dewey puts it this way: "It is as if the child were forever tasting and never eating; always having his palate tickled upon the emotional side, but never getting the organic satisfaction that comes only with the digestion of food and the transformation of it into working power" (p. 194). As stated in Chap. 1, many of these features of the traditional schools are often cited by students as a source of chronic disengagement even today.

Similarly, Csikszentmihalyi et al. (1993) observed that teachers of traditional subjects frequently either emphasize the momentary, intrinsically rewarding, playful aspects of experience, or the long-term rewards associated with future goals, but seldom both. Consistent with this appraisal, our research found that students often

characterize their experience in traditional academic subjects in much the same way. For example, students enjoy their task-oriented involvement when in art class but tend not to find it important for their future goals; whereas students find math instruction important for their future goals but report little intrinsic enjoyment with their interactions with it in the moment (Shernoff et al. 2003).

Dewey believed that if, instead of taking a subject-centered approach, adults first and foremost tended to the needs and instincts of children, and ultimately to the full growth and expression of the child, the child would inevitably become immersed and educated in the information and culture of adult life during this process of growth. It is clear that motivation was an important part of the difference between the child of the traditional school and the ideal one he envisioned; Dewey also believed that self-realization was a more important goal of education than the learning of information and knowledge. Echoing Einstein, he declared, "Personality, character is more important than subject matter" (Dewey 1902/1990, p. 187).

Dewey's viewpoint from the turn of the twentieth century is consistent with many contemporary perspectives on education. For example, many contemporary psychologists subscribe to the view of Lave and Wenger (1991) that learning is typically a function of the activity, context, and culture, which is to say that learning is *situated*. This contrasts with many classroom activities in core subjects in which the subject matter may be taught out of context. One example with which I'm quite familiar is textbooks on adolescent development, the topic of courses I regularly teach. Most textbooks on this subject divide the contents into the processes of development such as physical, cognitive, and psychosocial development, as well as the various contexts for development, such as school, family, and society. However, most developmental psychologists would agree that the processes of development occur within all these contexts, making the developmental processes and contexts in which they occur inseparable.

With respect to epistemology, many experts today are more likely to view disciplinary knowledge itself as a continually evolving provincial set of claims influenced by society and culture than a body of conclusive truths discovered by impartial experts. Increasingly, knowledge is considered to be constructed in a variety of ways—cognitively, socially, culturally, and historically. With such a view of knowledge, the habits, practices, and powers of the intellect become an educational aim superseding knowledge. Thus, Einstein famously declared, an opinion that he personally embodied, that "imagination is more important than knowledge." Whereas "knowledge is dead" according to Einstein (1954, p. 60), imagination expands our present knowledge and reaches for higher levels of reality, awareness, and consciousness. In fact, it was Einstein's imaginative thought experiments that ultimately demonstrated that constructs like time and motion are not fixed truths but relative constructs. Both Einstein and Dewey were remarkably consistent in believing that the training of mental powers supersedes the teaching of circumscribed knowledge and skills. Because future conditions were likely to change the relative importance of any set of knowledge and skills, helping the young to think and act intelligently and responsibly with respect to needs and priorities in relation to the past, present, and future was a more important aim of a good education. One

observation that cannot be understated these days is that in a day and age where information has become ubiquitous thanks to the Internet, schools will be as vulnerable to becoming obsolete as print newspapers if the "what" of learning continues to be mere information and "knowledge."

A Five-Stage Developmental Philosophy of Engagement with Learning

With Dewey's and others' thoughts as a useful background, I would also like to suggest that the "what" of learning is not the same for all stages of development. I would like to briefly outline five major stages of education for the twenty-first century (see Table 8.1) with a focus on what is needed to engage students particularly in their adolescent years.

The stages are not entirely chronological. In other words, there is some overlap, both conceptually among the stages as well as the age range that each represents. A unique property of this stage model, however, is that what is the focus of learning in one stage becomes a primary component of a larger system that is mastered in the next.

The first stage in the early years of life is best described as acquiring *rudiments*, that is, rudimentary skills and knowledge necessary as the building blocks for adaptation to the culture and future education. This includes the fundamentals of language, writing, logic, conceptual understanding, music, social skills, and physical skills. Although there are different philosophies as to the most effective approach to teaching these rudiments (e.g., phonics vs. whole language), engagement in learning rudiments typically involves exposure, modeling, practice, and social interaction.

During the second stage, which roughly corresponds to the years of elementary education, the basics of *cultural knowledge* are obtained. These basics are culturally relative and are constantly shifting with time, era, and cohort. However, there are certain necessities in terms of basic cultural knowledge without which adaptation to the culture and future education would be nearly impossible because absences, gaps, or incompleteness in "schema" would prevent adaptation. This might include basic cultural knowledge such as: What is a bank and how does it work? When do you say "thank you" and "please"? "When do cars need more fuel?" "What should you do if there is a fire or other emergency?" and "What is the relationship between north, south, east, and west?" Later, this would include more "advanced" and slightly less essential information for day-to-day survival, such as foundations of geography, history, science, government, economics, and other domains of knowledge. While in truth, cultural competency may include awareness, attitudes, and values, most of this knowledge could be represented as information; at any rate, this is the stage in which knowledge and information is most crucial. Here, engagement of learning the basics of cultural knowledge may include exposure, modeling, direct

Table 8.1 Five-stage developmental model of engagement in a twenty-first century education

Stage	What is learned/gained	Traditional grade/age	Primary mode of learning
First	Rudiments of learning	Infancy through early childhood	Exposure, modeling, practice, social interaction
Second	Cultural knowledge and information	Childhood/elementary education	Exposure, modeling, direct transmission, involvement in cultural activities
Third	Domain-specific skills and competencies	Adolescence: middle school through college	*Episodic* engagement: episodes of experience in related activities, involving movement, rhythm, action, and/or logic
Fourth	Vocational/professional training and mastery	Adulthood: graduate school through career or vocation	Participation and mentoring within a community of practice
Fifth	Global education and responsibility	Mature adulthood	Common educative processes (e.g., modeling, direct communication, instruction, media); interaction with role models of citizenship; involvement in coordinated, socially responsible action

transmission through language (including media, books, school instruction, etc.), involvement in cultural activities, and other ways that basic cultural knowledge is transmitted to the younger generation. Note that it is impossible to acquire this basic cultural information without the rudiments of learning such as basic language, logic, mathematical, and conceptual skills that must first be obtained in Stage 1.

Stage 3, during the adolescent years, typically corresponding to middle school, high school, and going into college (and psychologically corresponding to social and occupational identity development), *domain-specific skills,* talents, and competencies are obtained, especially in "favorite" vocations and avocations in which individuals may increasingly favor and specialize. In particular, learning and developing special talents in a certain set of skills is the most essential part of qualifying for a given profession or vocation. The set of competencies and skills are rooted in a corresponding set of compatible values and motivations, because without these,

the individual would be unable to obtain the necessary practice in activities to hone the necessary skills. The actual information and knowledge that is part of the qualifications or credentials in any profession is ordinarily obtained very quickly, and can also be accessed through a variety of media, and thus is of secondary importance. Of course, some of the basic and less specialized information necessary must first be obtained during Stage 2, without which the gaps in schema would be too great to specialize effectively in many vocations and avocations. While much more could be said about this stage, the most important point here is that engagement in learning and developing these more specialized talents and skills, experientially speaking, involves episodes of experience in related activities. Actually, *flow* is a very close and useful description of what engagement looks like during this stage. Ordinarily, some sort of movement is involved. The unit of these experiences are *episodes*, usually with a beginning and end. Useful examples are songs, dreams, games, conversations, and other organized, rule-bound units of meaning that organize an activity, which, on the experiential side, translates into encapsulated episodes characterized by movement, rhythm, action, and logic. The most important corollary to this point is that engagement in learning and developing these skills is not direct transmission through language, no amount of which could adequately compensate for the prerequisite involvement, immersion, and engagement in this essential, *episodic* form of learning. This was a major educational implication of the pioneering research with talented adolescents by Csikszentmihalyi et al. (1993).

At the fourth stage, roughly corresponding with graduate level training and/or entry into a profession or vocation, one is engaged in learning the practices, values, attitudes, and specialized knowledge associated with a specific job or broader field or domain that encompasses it. Roughly speaking, it is everything one must do in the process of building a reputation as a good engineer, mechanic, lawyer, plumber, salesman, teacher, or artist. It is learning about and *acting* like other such professionals and making the sorts of professional judgments and decisions those in the profession are entrusted to make. As one of many possible examples, engineers are entrusted not only to make bridges, buildings, or vehicles that "work," but also that work *safely*. Thus, this stage of education is best described as *engagement in vocational or professional mastery*, not merely vocational training. This sort of engagement typically occurs within a *community of practice* (Lave 1988; Wenger 1998) or others engaged in a process of learning and daily practice of a shared domain of human endeavor. Mentoring within a profession or community of practice, as often happens in internship models, is a key way in which new practitioners absorb the principal habits of mind used on which the community relies (Nakamura and Shernoff 2009). The signature skills and competencies learned in Stage 3 (e.g., how to read music, run an experiment, or analyze a case) is an important and essential component of what is obtained at Stage 4, but it is not all that is required to build a reputation as a good and trustworthy professional or practitioner of a given domain.

Stage 5, representing engagement in *global education and responsibility*, is not extremely common but is asserted here as the appropriate end point of the educational progression. It may not escape notice that each stage within this model involves immersion into an increasingly (if not exponentially more) complex world

or system. Thus the logical end point is the global community if not the cosmos (I use the global community as the largest known *social system* at present). At this stage, one obtains awareness of the collection of various professions and cultures globally, and understands the roles and responsibilities of individuals, professions, corporations, governments, and sectors within it. While some of this knowledge may be obtained in Stage 2, it does not accompany the signature trait of active engagement within this more global system. This is not to suggest that every individual need be engaged in an endeavor with a global scale or outlook. It does, however, strongly suggest the aspect of being a *good citizen*, over and above one's responsibilities as a good worker or professional in stage 4, typically entails some degree of *civic engagement* even if the form of engagement greatly varies. For some, civic engagement may mean involvement in affairs that are more local than global. Given that there are many ways to express one's citizenship locally, nationally, and internationally, such people are behaving as responsible citizens within the global community as they define it. Engagement in global education and responsibility is achieved through common educative processes (e.g., modeling, direct communication, instruction, media) as well as through interactions with role models of citizenship and involvement in socially responsible action.

One important implication of this five-stage model is that public schools traditionally teach in a way that is compatible with the nature of engagement in only the first two stages. It suggests that the traditional approach is particularly problematic during adolescence, especially in middle and high schools. Because the nature of engagement with learning during this stage is episodic, students are much more engaged in vocational classes and structured after-school programs that are more activity based.

Meanwhile, instruction in high school core courses often teach information and knowledge, more characteristic of learning in stage 2. Unfortunately, the learning gains (e.g., domain-specific skills, competencies and talents) that must come from episodic engagement simply cannot be made with this educational approach. For example, one does not, and simply cannot, learn to play the clarinet, write a report, draw a portrait, analyze a problem, or make an argument *only* by listening to a teacher, reading a book, or watching a video, as helpful as these media can be. Thus, traditional secondary education in general has emphasized what students *should know* over what they *can do*, and in so doing have gotten the educational prescription for this stage precisely backwards.

There are implications with respect to the fourth and fifth stages as well. In most graduate programs, the professor is often a member or thinks like a member of a given profession or vocation. In the hard sciences, for example, graduate students may spend years working in a community of practice of other scientists in a given lab. Often, as in law or medicine, this may occur during an internship or clerkship phase. Students often attest that they had no idea how these professionals "really function," or were ill equipped to handle the myriad of daily decisions necessary to truly "be" a practicing lawyer or doctor until that point. Effective college and graduate programs in many disciplines might do more, therefore, to involve students in

relevant communities of practice earlier, making such experiential learning more integral to the program.

Of course, the fifth stage is not meaningfully addressed whatsoever within formal education except in small pockets, such as a handful of innovative programs for youth (some of which will be discussed in this book) and activist agencies for adults. As a global and societal issue, all stakeholders and segments of society bear some responsibility for global education, with educational institutions having a significant role to play, although the topic is sufficiently complex that it is beyond the scope of what may be commented upon adequately here.

Engaging Approaches in Core Academic Subjects

With this backdrop, we now proceed to discuss engagement in core academic subjects: history, social studies, science, English, and math. Then, in Chap. 9, we will also discuss increased interest in curriculum in noncore subjects like art, vocational education, and Social and Emotional Learning (SEL).

History

History is the subject most commonly associated with direct instruction. Indeed, teachers rarely use engaging pedagogical approaches in secondary history classes and, not surprisingly, students are rarely engaged in them (Shernoff et al. 2000). Why this should be the case is not quite as obvious, however. As Csikszentmihalyi (1990) noted, observing and recording past events, both large and small, is one of the most common, satisfying ways of bringing order to consciousness, implying that *doing history* is an inherently flow-evoking activity. Writers from Dewey (1916/1944) to Erik Erikson (1958) to have observed that framing the past with a structured story, including biographies, enriches life with meaning. After encountering it as a core subject in school, however, most students associate history with a dreary set of dates and facts to memorize in order to pass the required tests and courses. In fact, all core subjects are seen as "disciplines" when they come to be seen as separate from enjoyable or intrinsically rewarding spheres of human endeavor. As Dewey suggested, the lack of enjoyment and meaning is derived mainly from isolation: an emphasis on the learning of facts and rules separated from application and meaningful goals in the contexts of daily life in which they are used.

In the case of history, more could be done towards helping students to *do* history rather than only *learn* it. In the early year, this might be as simple as keeping a journal and linking events to other recorded events in history. As students move into adolescence, this might involve more of a conscious shift from a stage 2 approach to a stage 3 orientation of doing and practicing some of the basic skills, competencies, and habits of mind that historians do. This might include choosing a historical

question to explore, accessing historical records and archives, analyzing data sources, constructing historical narratives, and considering the weight of evidence that supports different possible accounts. Of course, those who actually specialize in history in college and graduate school might also transition into a Stage 4 education of *thinking and acting like professional historians* and then taking the *discipline* of history more seriously.

While this shift from a Stage 2 to Stage 3 educational orientation may be needed to some degree in all of the core academic subjects, the challenges with history may run a little deeper. More than in other subjects, content from the distant past is isolated from students' lives in the present. They come to see history as a collection of wars, treaties, empires, and revolutions without seeing the relevance of these events to the world they inhabit. Even in US history, the Civil War, presidencies, Supreme Court rulings, and civil riots and unrest are all largely seen as events that *happened to* people, and by implication, students themselves, albeit in the distant past (Levinson 2009). That is, students see their relationship to events shaping the direction of even their own country and society as one of being *objects*, as opposed to valued and meaningful participants. To some degree, this passive disposition may be learned in school by themselves. Thus, civic life is something that one *undergoes.*

Historical knowledge may make citizens more informed, but not necessarily more engaged in their citizenship. In the case of history, we in fact come to see the limitations of teaching for knowledge as opposed to teaching *for engagement.* One reason history is important, most would agree, is that it can lead to *civic empowerment*. To be empowered, it is considered important to have a proper *appreciation* for ancestry and events, especially—in the case of US history—for the wisdom of the founding fathers and the abiding values in liberty and equality, values for which Americans have fought throughout their history (Albert Shanker Institute 2003). Of course, there is a high degree of patriotism and love for one's country attached to this view.

Of course, however, this narrative of history does not ring true for all Americans. Particularly for groups that have experienced discrimination or suppression or even slavery as in the case of African-Americans, America is still associated with (racial) segregation, economic inequality, and indifference. For these groups, love of one's country may not be as forthcoming. These groups may have access to the same set of historical facts, but construct a very different narrative of American history, one told in the home, on the street, or otherwise in participation in their own ethnic culture (Levinson 2009). In this view of history, the essence of America may not be original benevolence but original sin: While it may have been founded on the ideals of freedom and equality, it practiced egregious violations of these values (in the form of sexism, racism, and slavery) from the very beginning. Whereas in the benevolent account of US history, the difference between our ideals and practices were subsequently resolved through elections, court decisions, legislative changes, civil war, reform movements, and acts of heroism, cultural groups who may still feel victimized or marginalized may compose a different sort of narrative. For them, the US government has systematically and institutionally failed entire ethnicities and

classes of people. Thus, African-Americans may be entirely suspicious of historical accounts that not only paint a falsely glowing picture of its shortcomings, but moreover, one in which *African-American history* is entirely absent. Furthermore, if their history is not taught in school, then they must choose between their own history and school's history. Thus, it is not difficult to understand why school's version is entirely ignored by whole groups of students. So much for the value of "historical knowledge," which becomes relegated to the cultural status of "school" or "book" knowledge. So much for respecting those who teach it. And thus it is not difficult to see how the problem of school disengagement is exacerbated in this process.

We quickly confront, then, one flaw, if not a fatal one, of teaching for knowledge only. The first is the problem of "whose history?" However, we can begin to work our way out of this problem by going a little deeper into where the two accounts (i.e., original benevolence vs. original sin) differ and what they have in common. Although the two narratives differ sharply in their beliefs about *who* is good, there is much more agreement about *what* is good. Most obviously, the ideals of freedom and equality are mutually extolled. Even more important is the mutual value and high regard for civic *engagement* itself. In the original benevolence narrative, processes of civic engagement (e.g., the court decisions, reform movements, etc.) are what reconcile any conflicts between the ideals and shortcomings of practice. In the original sin narrative, civic engagement is the process through which oppression can eventually lead to freedom (or at any rate, greater freedoms).

The proposition that the strength of our agreement in *what* is good can be stronger than disagreements over *who* is good was recently supported by the election of Barak Obama as president of the United States. Obama was affiliated to Reverend Jeremiah Wright, whose controversial sermon during the presidential campaign in 2008 was distinctly identifiable as an original sin narrative of American history, complete with the irredeemable government failings and inhuman treatment of oppressed groups, and punctuated with the exclamation, "God damn America!" (Wright 2003). Given that previous presidents were not only white but also represented the original benevolence narrative, it is highly unlikely that Americans would have elected a president who represented simply an overthrowing and replacement of one narrative for the other—one in which the founding fathers and the essence of America turns instantly from inherently benevolent to inherently sinful. However, Obama proved skillful at downplaying divisions over who was benevolent and who is blameful and instead accentuated the virtues of civic engagement as a common source of national pride, highlighting themes of struggle, obligation, and opportunity. As he put it in one campaign speech:

> And yet words on a parchment would not be enough to deliver slaves from bondage, or provide men and women of every color and creed their full rights and obligations as citizens of the United States. What would be needed were Americans in successive generations who were willing to do their part—through protests and struggles, on the streets and in the courts, through a civil war and civil disobedience, and always at great risk—to narrow that gap between the promise of our ideals and the reality of their time. (Obama 2008)

Like Martin Luther King Jr., Obama modeled the importance of not only the freedom to fight but also the obligation to take every opportunity to do so. The

lesson *we* can take from this recent bit of history when it comes to *teaching* history is that the specific narrative isn't the important thing, so much as the recognition that our historical knowledge is inevitably *constructed* by individuals and groups. Freedom to do so is one of the many freedoms we value. *Engagement is the thing*, in this case, civic engagement. *Demanding* justice is a matter of agency, of controlling one's own destiny rather than being acted upon by a string of spurious inevitabilities. Participating in civic processes is regarded as a virtue in and of itself, regardless of what one is fighting *for*. The primary value judgment is that it is better to take a hand in playing the game than to be a silent observer and that every "vote" counts. Only inaction is dangerous because it is tantamount to a silent tolerance of racism, discrimination, oppression, or inequality.

In addition, education is an implicit value, because becoming educated is the first step in standing up for one's rights or in fighting for one's beliefs. Most importantly, the primary attitude—among teachers and students alike—is that the *practice* of history is a dialogue in the present; history is not confined to the past. The role of the teacher, therefore, is not to represent one version of history. Rather, it is to acknowledge that it is often not possible for history to be constructed by all people as a single narrative, and therefore to instigate the conversation, frame important debates, facilitate important questions, and stimulate empowerment through which those debates come alive.

A Stage 3 approach to history asserts that it is impossible to have a strong civic and historical understanding in absence of meaningful civic *experiences*, which are episodic rather than created through the mere transmission of information. These episodes are, by nature, *skill building*. Levinson (2009) argues that civic education should help youth to acquire the skills, knowledge, and attitudes to become competent and responsible citizens. In one example, Levinson tells the story of leading her students on a research project to investigate the history behind why school uniforms were imposed at their school, the results of which would be shared at the school's social science fair. Levinson exposed the students to newspaper articles, took them on a field trip to the public school central administration building to search the records over discussion and debate of the policy, and assisted her students in interviewing experts on the topic in order to expose them to the complex history and the many social issues implicated in the rising popularity of school uniform policies. She encouraged them to create a balanced table of arguments in favor and against school uniforms. At the end of this process, however, students believed almost exactly what they believed before the investigation started: that the school board imposed school uniforms in an attempt to separate them from the surrounding "ghetto" neighborhood, to clean them up, and "take the ghetto out of them," sort of speak. When Levinson asked her students what about all of the other possible reasons and arguments for and against school uniforms that they investigated together, they responded that those arguments didn't apply to them.

Levinson uses this anecdote from her teaching to illustrate that youth come into the classroom with partially constructed understandings of their civic identity and the significance of historic events, as embedded in their emotions, attitudes, and

skills related to issues that they deeply care about. Thus, effective history and civic education strives to connect to these *present* emotions, attitudes, and skills.

One concrete model of classroom-based civic education is provided below. Even though it is discussed in the section on social studies, the model equally loans itself to US history education and curriculum.

Social Studies

For the reasons discussed above, it is therefore important to ask: What is good citizenship and good civic education? A compelling example of classroom-based pedagogy in social studies that engages students in critical exploration of issues affecting their lives inside and outside of classrooms, allowing them to explore connections to larger issues in civic life, was a model of student action research as described by Rubin (2009). Just as with history instruction, social science teaching practices that call upon students to consider and be critical of their civic experiences encourages the development of civic identity and empowerment, especially for students experiencing a disjuncture between these civic ideals and the reality of their lives. The example played out in the context of a yearlong, mixed-method research study conducted at three diverse public high schools in New Jersey.

The research project focused on two schools participating in the study, one a diverse, middle class community and the other one of the poorest and most crime-ridden communities in the state. While students in the first school focused on a school rule prohibiting backpacks in the hallways, students in the second chose murder and drugs as their civic problems to investigate. Students in both schools shared a sense of outrage at the injustice as well as a desire for change. Nevertheless, the comparison between how the project played out between the school groups is illustrative of the importance of the nature of the problem addressed by action research projects. While students in the first school (backpacks) cared about the issue, for example, students in the second (murder) were more passionate and psychologically unsettled, which led to a higher level of critical thinking flowing from greater personal investment. They struggled with what action might mean and what the real-world consequences would be, of action within their dangerous setting.

Of course, the students' relationship to the project were based in part on their backgrounds, neighborhoods, and current environment. For example, students in the first school were relatively sheltered within their middle class, suburban towns, rarely coming into contact with community problems or societal issues addressed by the project: inequality and social change. The first school chose an entirely school-based concern that had little to do with wider social issues except via abstraction (e.g., a "small example" of greater social injustices) and thus was only loosely connected to the revised curriculum in which it was based. Even for these students, the new approach based on action research flourished relative to traditional approaches. Students engaged in lively discussions over important questions in civic life, such as America's (proper) role in the world, whether the economy was

fair, and the nature of social change—all questions informed by US history and social studies. In a fourth quarter project, students researched, created posters, and gave informed presentations on a social change movements such as those for gay rights, pro choice/pro life, Native America rights, and others.

For students in the second school, the research project and larger social issues were one and the same. They shared a keen sense of the tragic impact of murder and violence on the community, their siblings, and themselves. Students spoke with pride about their desire to participate in community life in order to improve conditions for themselves and others; and they spoke frequently about the need to improve the community on behalf of children and youth in particular. They also took the experience quite personally. Eighty-four percent indicated that they were angry about the conditions some people had to live in; 85 % stated that when they thought about the hard times some people go through, they wonder what's wrong with this country; and 77 % agreed that they get mad when they hear about people being treated unjustly.

A majority of students in both schools were inspired towards civic participation and commitment; the effect was more profound for students in the second school, however. A full 94 % of participating students in the second school (murder) said that they would volunteer time to help poor or elderly in the community; 92 % of the students in the second school said they would work with others to solve community problems; and 83 % in the first school stated that they had a passion and desire for change and were better equipped to make social critiques through direct contact with deep social problems. Students in the second school also went on to make scrapbooks related to their project in which they created new meanings for themselves and forged higher degrees of voice and expression (Rubin 2009).

Another inspiring example of stimulating civic engagement through social studies curricula is the *Civic Action Project* (*CAP*) of the Constitutional Rights Foundation (CRF). CAP is an innovative curriculum emphasizing the study of local government and civic participation in the context of US government and related courses. The CRF, a national leader in civic and law-related education, developed the program to help students become informed and engaged by educating them about their rights and responsibilities as citizens, encouraging students to become involved citizens of their communities, cities, states, and nation. A range of CRF programs are designed to educate youth about how law and the government work (e.g., how a bill becomes law), and how to make their voices heard. While based in Los Angeles, California, over 30,000 teachers across the United States use CRF's curricular materials to breathe life into classes in civics, government, and history and to connect the issues to students' lives today. In so doing, they strive to help students become both motivated and prepared to participate effectively as citizens.

The Civic Action Project (CAP) provides teachers with a detailed curriculum for high school civics and government courses with a practicum in which students apply course contents to the real world. Students have the opportunity to discuss what social or environmental issues are most important to them, give their opinions about them, and decide how they could make a difference. Students then execute CAPs to practice what active citizens do in order to affect policy or solve real social

problems. In the process, students begin to understand how government, politics, and civic life really work. For example, students decide on what they want to see happen to make a change, and then learn whom to contact, how to contact them, and what their rights are as citizens seeking change. Both the teacher serving as a coach and a variety of resources help to guide students as they identify a problem, research it, take civic actions, and document their experiences. The CRF website itself is a valuable resource for students, including features to discuss and blog in order to ask and receive feedback from other students, share surveys and materials, peruse related articles, and discuss issues.

The CAP curriculum consisting of lessons to guide the civic action process is available to participating teachers across the country who register and enroll their class at the CRF website. Several of these lessons are centered around *simulations* of prototypical decision-making processes related to local government such as debating changes in a city charter, taking part in a press conference for a local election, or participating in a mock trial. Some lessons provide examples of ways citizens impact public policy, at their discretion. For example, one of these lessons is on building constituencies, using the Montgomery bus boycott as an example to illustrate that discrete civic actions can have large social impacts. The readings and interactive classroom activities help students learn how governments create local policies, how the policies can be influenced, and strategies for effective citizenship. A myriad of CAPs have addressed police brutality awareness, lack of available medical care, hygiene in schools, school budget cuts, regulation of animal shelters, availability of contraceptives, substance abuse, availability of college scholarships, the cost of higher education, requirements for acquiring medicinal marijuana, and discrimination of same-sex couples.

After becoming informed and thinking critically about an issue, students take a variety of actions in their projects including discovering governmental processes involved, developing and advocating for a position, beginning civic dialogue, building constituencies, engaging in civic writings and presentations, and meeting with appropriate officials. Through these actions, students develop many important citizenship skills including policy analysis, persuasion, and presenting to audiences. CAP teachers also create assignments to help students write with clarity and purpose, express their perspectives persuasively, publish their work in a safe environment such as podcasts, and reflect on their civic actions. Many teachers also develop a culminating activity such as the development of multimedia presentations in which students have used posters, PowerPoint, video, and letters to share their projects and propose solutions to other classes, parents, community members, and policy makers.

Kahne et al. (2006) conducted a high quality, quasi-experimental study of the CAP program when it was in an early stage of development called CityWorks, and found that students exposed to the CityWorks curriculum exhibited greater gains in participatory citizenship and justice-oriented citizenship than those in a control classrooms. They also had greater gains in personally responsible citizenship and knowledge of social networks. In qualitative interviews, participating students testified to gaining a high level of involvement as good citizens and the expanded

knowledge that such involvement entails. Several students mentioned the increased motivation that comes with the prospect of making a difference in the real world. Overall, results corroborated the CRF coordinator's assertion that students are more likely to become engaged with issues that affect them and are relevant to their lives.

While CRF programs like CAP are not specifically designed for at risk or minority youth, by targeting many low-income schools serving a high percentage of minority students the program also addresses the increasing concern that these populations are not being sufficiently prepared to become effective citizens, risking further marginalization (Constitutional Rights Foundation n.d.; Kahne and Middaugh 2008).

CRF programs include not only CAP but also *Courtroom to Classroom*, *Teaching American History*, *Expanding Horizons Internships*, *Mock Trial*, *My Town*, and others (interested readers can get more information about each of the programs from the CRF website at www.crf-usa.org). For example, in the *Mock Trial* program, over 10,000 students from 36 counties in California develop talents and explore career paths related to trial law. By arguing cases as lawyers would in mock trials inside real courtrooms, student participants get firsthand experience with what trial attorneys actually do during trial proceedings.

English

Reading is one of the most frequently mentioned flow activities around the world (Csikszentmihalyi 1990). We all know what it is like to get "sucked into" a good novel, not to be able to put it down. Thus, even though flow activities may at first conjure images of athletics or movement like running or dance, it is clear that being in flow can also be a purely mental activity—or at least that the movement or action involved can be represented only mentally for a similar experiential effect, as with a dream. Children experience the magic of word play, stories, and rhyming (games or songs) quite earlier. Later in life, adults find the same magic in music, novels, poetry, and an increasing variety of media.

Wilhelm and colleagues (Wilhelm 2008; Wilhelm and Novak 2011) offer one of the more compelling accounts of engaging students, even the most disengaged ones, in the context of teaching literacy/literature. An English teacher himself, Wilhelm (2008) noticed that many if not most eighth graders simply hate reading. This was very different than his own experience and history as a reader, however; he always enjoyed reading intensely. For as long as he could remember, he always kept several piles of books to read next, and when he opened them, he imaginatively entered the story world of the books he read and felt to have formed lasting "friendships" with the characters and authors he encountered. He set out to discover the types of experiences his students lacked in order to develop a love of reading like his own and the teaching methods that could foster such experiences.

One of the first things he discovered was that some children did in fact spend hours on their own couch reading books, but did not like or succeed in reading in

school. Clearly, there was a chasm between home reading and school reading. More alarmingly, a cool half of his students considered themselves "nonreaders" and almost never read at home or for their own goals, but rather saw reading as something they had to do for school. Some of these students disliked reading almost more than anything, even their chores. Other students put up with the distasteful school reading and went home to do "real" reading. Equally negative were their views of their English and reading teachers. They believed teachers didn't care about what they read, but only if they answered their questions about the reading correctly.

Wilhelm saw reading as *transactional* (Rosenblatt 1978), which we have argued characterizes all forms of engagement. In reading, this means that the reader and the text converse with each other, or act upon each other, in the process of making meaning. Just as Levinson's history students, readers bring with them memories, personality traits, past associations, attitudes and biases, skills, and their mood or physical condition at the moment—all of which continually interact to determine what is communicated by the text. One important distinction is that between "efferent" and "aesthetic" reading. In efferent reading, the reader is concerned about what information is being "taken away," as with much of school reading. When one reads for the intrinsic rewards and enjoyment, however, the reader is adopting an aesthetic posture towards the text. Wilhelm (2008) discovered that engaged readers often give texts an aesthetic reading, while the reading of reluctant or disengaged readers tends to be more efferent or literal. What Wilhelm observed was that these latter readers never quite discover the world or life of the story.

How did Wilhelm make these and other insightful observations about students' experience of reading? In addition to keeping a teacher journal, and having students keep journals (occasionally sharing entries as "literary letters"), Wilhelm (2008) utilized several versions of *think-aloud protocols. For example,* in *free-response protocols*, students were asked to record their thoughts when they noticed something about how they were reading. In *cued-response protocols*, Wilhelm inserted a caret somewhere in the text, usually in the middle or end of a page, in which students were asked to stop and to state what was going on with them at that point in their reading. Just as with The Experience Sampling Method (ESM), this technique gave Wilhelm a window into his subjective experience during an activity—in this case, reading. However, one difference is that the responses were purely descriptive and open ended.

Through this combination of methods, Wilhelm discovered multiple dimensions of readers' experience or response within three broad categories which he outlines in his (2008) book, "*You Gotta BE the Book: Teaching Engaged and Reflective Reading with Adolescents*." The first category was *evocative dimensions*, which are the most closely related to personal, intense engagement or involvement with the text. This includes entering the story world (in which prior knowledge and experience is activated); becoming interested in the story plot, making predictions, and forming expectations; relating to the characters, often aligning oneself with characters or otherwise becoming present or personally involved with them; and seeing the story world, creating powerful mental images about it. Most strikingly, when highly engaged in reading, readers felt like they were "really there." They felt to have

gotten inside of, merged with, or actually become certain characters. Like many flow experiences, there was thus a transcendence of physical or ego boundaries. From this point on in the story, readers formed an image of a secondary world that stayed with them for some time. However, a sizable minority of "resistant" or disengaged readers never made such a move. They had difficulty visualizing the story world and did not feel to be participating in it. Such students had difficulty responding in subsequent connective and reflective ways captured by the next two response dimension categories.

In *connective dimensions*, the reader interpreted clues and filled in the gaps to create personally constructed meanings from the story world, often in ways that went well beyond the content of the text. Wilhelm found that texts invariably leave gaps or holes that sophisticated readers fill in almost unconsciously, but that sometimes leave reluctant readers at a loss, at times even creating an impasse. More engaged readers also began making powerful connections to past and present situations in their own life and begin to ask themselves, "What would I do?" In *reflective dimensions*, readers considered the significance of events and their meaning in a story and formed judgments about the author, assigned personal value or worth to the overall success of the story and the author's skill in crafting it, and recognized their own role in forming meanings about the author and the text. For example, readers will recognize what an author wants a reader to do, feel, or believe, and may either follow this intention or alternatively feel manipulated and reject it. What Wilhelm found was that *readers who did not first become engaged, or "enter the story world" as represented by the evocative dimensions, rarely described connective or reflective dimensions of experience, either*.

Wilhelm set out to find instructional strategies that could provide the same sorts of experience for the reluctant readers that the more engaged readers were having. His answers: drama and art. He believed that drama and art could help to develop a type of awareness and kinds of meanings within the less engaged readers that the more engaged readers readily experienced. It was a way of "bringing the invisible secrets of engaged readers out into the open, where they could be observed and shared and tried on by other readers" (Wilhelm 2008, p. 110).

Not only did reluctant readers fail to make some of the same moves engaged readers made like filling in the gaps and interpreting the meaning of events, but they behaviorally reinforced this stance by waiting to be told what the text meant or what they should think about it. In other words, they knew that adults would eventually do for them, at least partially, whatever mental work was valued so much as to be truly expected of them. Wilhelm first experimented to see if creating the story world through drama would help these students take a hand in the game itself: Could it be one way to help students bring their backgrounds, experiences, knowledge, interest, desires, and questions to the act of reading? He then implemented a variety of drama-based instructional activities such as *revolving role dramas* (taking turns acting out particularly scenes paralleling the text), *dramatic play* (improvisational acting to fill out expected action following a prompt from the story), *guided imagery* (writing about or drawing scenes, often guided by visual descriptions or musical accompaniments), *snapshot and tableaux dramas* (dramatically depicting the

"freezing" of a given scene and providing it with a caption to deeply penetrate the emotional relationships, gestures, expressions, and activities of the actors at that one point in time), *analogy dramas* (performing dramatic vignettes based on one's own life experience paralleling the story), and *To Tell The Truth game* (several students role play a character and are questioned by a panel of student judges who will decide who has most convincingly played the character).

Drama could be used to great effect for reaching deeper levels of understanding the authors of texts and the characters they create. For example, students can be put in an author's "hot seat" and can take on the role of the author in fielding questions about the work. This requires students to put themselves in the author's perspective and speak convincingly with the author's inner voice. On one occasion, Wilhelm's students insisted on putting the character, Huckleberry Finn, in the hot seat. This led to students creating a stream of conscious monologue from Huck explaining why we play jokes on other people and the consequences of doing so. Afterwards, several students volunteered to be hotseated as Twain, while other students took on various roles as reporters in a press conference, detectives, and psychologists in questioning the famous author. This led to several deep conversations regarding racism, when a work of fiction is truly "done," and other vital topics. In these and other ways limited only by the teacher's creativity, students formed greater connections with the characters and authors through involvement in activities requiring them to think deeply, sympathetically, and imaginatively about them.

Wilhelm also used art in his teachings of literature, to similar effects. For example, he utilized *symbolic story representations* in which students used cutouts, explained them, and moved them around to describe the story through action; *visual protocols*, in which students stopped to draw a representation of their visual impression of the story as soon as they formed one; *illustrating* nonillustrated story *books*, including those they make with their own stories; *reading illustrated books* and moving to nonillustrated books as students formed their own images; *picture mapping*, in which students visually depict key details of the text; and *creating collages* representing the students' response to a piece of literature, using poems, songs, and visuals of choice.

As they were participating in these activities, reluctant readers began to make the same moves as the engaged readers in all three dimensions of reader's response: they created and entered story worlds, connected to the characters and authors, and reflected on their meanings. Some commented about actually liking reading, and suggesting the influence of the drama activities, stated that "reading is easier if you are a character" (Wilhelm 2008, p. 137). One student stated she "couldn't get over" the idea of being in the story herself (p. 138). Individual check sheets indicated that those who did not visualize a story world before the drama activities were doing so regularly within 4 weeks of implementing them.

As with many great teachers, Wilhelm considered his students' engagement to be his primary measure of success. Students who had reported of never having had a relationship with a character were now becoming friends and confidants of characters and were interacting and partnering with other students in doing so. After

role-play scenes, a student commented that drama is like "writing a story with your body" (p. 141), suggesting the value of making a story world concrete for them. After activities like a "two-sided story," in which they acted out scenes from their life that paralleled the story, or "in Through the Mirror," in which a character from the story entered the classroom, students commented on the richness of experiences in which they imagined themselves to be characters in different situations, and on the social value of doing these activities together as a group.

Some signs of engagement appeared to be longer term or more global. After reading the first book he ever read on his own, one student began regularly checking out library books. He commented that you "have to live the story" (p. 144). Comments like these suggest that creating drama activities in which students participate and are on equal footing with each other and adults may provide direction for change that is needed to produce greater engagement. Certainly, Wilhelm's experiment does much to suggest that the power to engage adolescent-aged students lies in transitioning from a Stage 2 posture of teaching only the cultural knowledge and information associated with "literature" to a Stage 3 stance of providing the experiences and training of junior level "experts" in a domain, so they can "know" what it is that such experts do. If we stop at Stage 2, students are merely passive consumers of knowledge, which in this example was exposed as the source of disengagement for many. In a Stage 3 education, students become creators of personal knowledge and architects of shared meanings. The drama activities makes it extremely clear that engagement in such learning is fundamentally *episodic,* entailing movement and a segment of absorbed experience somewhat like a dream. Just as with educational video games explored in Chap. 14, full episodic emersion—"being in" the activity to be learned—is a potent basis for deeper engagement with learning.

From "Being the Book" to "Being the Change"

At first, one might be tempted to believe that engagement in English or literature instruction has little to do with the forms of civic engagement described previously in the context of engaging history and social science instruction. However, all education may ideally lead to a higher civic purpose as represented by the fifth educational stage of global education and responsibility. Inasmuch as citizenship, responsibility, and morality represent values, one thing literature does best is to vividly represent and enact values (e.g., as when personifying them in characters). Literature can also be a remarkable vehicle for activating civic and moral engagement as well. For example, after reading *To Kill a Mockingbird*, an English teacher may note the importance of individuals willing to be "an Atticus" for the health of the community, and ask students to identify oppressed or marginalized groups as well as those who could be their "Atticus" and stand up for them (Wilhelm and Novak 2011).

In a subsequent book entitled, *Teaching for Love and Wisdom: Being the Book and Being the Change* Wilhelm and Novak (2011) argue that a good deal of what is

learned in literature instruction revolves around the "essential questions" that the teacher focuses on. For most books, those questions are implied by the books and stories themselves; but as we all know, rich works of literature can encompass numerous such questions. With good selections, an English teacher can easily focus on questions ordinarily reserved for the civics teacher such as, "What is a responsible community?" or those ordinarily for the history teacher such as, "What makes a great leader?"

Of course, a good teacher can enter the spiritual realm as well, with the hopeful goal of developing wisdom. For example, at the beginning of a course, Novak asks his students to write down what Kessler (2000) calls "mystery questions" or "the deepest questions we ask of life, usually only in our private moments" (Wilhelm and Novak 2011, p. 12). Novak then reads the questions aloud for communal awareness, questions such as: "Why do I feel so scared about becoming an adult?" "I wonder who is God, if there is a God?" "If there is a God, why is there so much bad on earth?" "Why am I so heartless to so many people?" The class next discusses these questions in a circle. Students are then encouraged to write a dramatic dialogue in which they live out their burning existential question and hopefully *see* themselves developing in new wisdom as the oracles flow through them.

Wilhelm and Novak (2011) illustrate that the process of teaching and learning between teacher and students is transactional, much like that between author and reader, and when students and teachers share existential questions and their lives with each other, they can form a democratic community in which *response* to literature can grow into *responsibility* for a community in which one feels emotionally integrated and involved. To stack the deck in favor of this occurring, Wilhelm et al. (2001) suggests jump-starting basic constructivist processes by *frontloading* instructional activities. Frontloading is designed to activate what students already know in order to open them to the building of new meanings in what they read, serving as personal and social points of contact. A teacher can frontload the exploration of a new unit or new text with essential questions of his or her own, such as "what is funny?" (Wilhelm and Novak 2011, p. 78). Of course, different essential questions may be utilized for different works and instructional goals. For example, a reading of Romeo and Juliet might be frontloaded with the question, "What makes or breaks relationships?" (p. 79).

Wilhelm and Novak (2011) identify a variety of ways that we as teachers commonly "ruin reading." It is clear that lack of enjoyment is at the heart of the issue most in need of being addressed to increase engagement. We forget that the reasons literary experts become engaged with literature in the first place is that, for them, texts evoke numerous deep pleasures: "the pleasures of the possible, the pleasures of the imagination, the vividness of language, of metaphor, beauty, and personal truth" (Wilhelm and Novak 2011, p. 91). Unless students learn that reading is the source of deep sustained pleasure, they will not choose to read and thus will not gain the skills necessary to become good readers. Perhaps this is why Csikszentmihalyi (1990) wrote in the introduction to *Flow*, "One way or another, if human evolution is to go on, we shall have to learn to enjoy life more thoroughly." Of course, what

students love to read and prompts flow is not only pleasurable, but also challenges the reader's thinking and assumptions (Wilhelm and Novak 2011). Some readers Wilhelm (2008) encountered compared the resulting sense of emersion one experiences to diving into deep waters after deciding once and for all to take the plunge.

Science

Csikszentmihalyi (1990) reminds us that the wonder and rapture that can be experienced observing laws of natural phenomena (as in Einstein's "cosmic religious experience" described in Chap. 2), and in testing and experimenting, is evidenced by the fact that for centuries great scientists did their work as a hobby. In fact, when Einstein developed one of the most influential scientific papers in history while working as a patent clerk, science was clearly an avocation; Einstein simply enjoyed it. When the first US Nobel Prize winner in science, Albert Michelson, was asked why he had spent so much time measuring the velocity of light, he responded, "Because it was so much fun." (p. 137).

In general, science education has a great deal of engagement built into it, not only because some people find science intrinsically enjoyable, but also because the discovery approach is inherent to the scientific method. Nearly all science labs try to use a discovery approach in which students carry out an experiment intended to discover an answer to the question being tested. That's not to say that all science instruction is engaging, however, as school science labs can vary a great deal with respect to how much students truly construct scientific knowledge through experimenting, discovery, and invention.

A great deal was suggested about science instruction in which students are deeply engaged in learning and develop superior conceptual understanding and scientific literacy by a quasi-experimental study conducted by Larson (2011). The mixed-methods study was conducted in ninth grade biology classrooms. Quasi-experimental comparisons were made between students ($N = 222$) who received academic literacy instruction to enhance motivation and engagement in science learning in treatment classrooms and students who received traditional high school instruction in control group comparison classrooms. Students ($n = 144$) in treatment classrooms received a *disciplinary literacy approach* to instruction, in which *academic literacy* instruction served to support science learning. A unit on bacteria and viruses was designed to develop interest and sustain engagement with academic language, vocabulary, and the social construction of meaning through positive learning experiences and a disciplinary literacy approach. Activities were designed and sequenced specifically to cultivate individual curiosity and promote real-world connections to the important ideas of the curriculum. Principles of *Backwards Design* (Wiggins and McTighe 2005), Hidi and Renninger's (2006) Four-Phase Model of Interest Development, social-constructivist practice (Brown et al. 1989; Lave and Wenger 1991; Palincsar and Herrenkohl 1999; Rogoff et al. 1995; Scardamalia and Bereiter

1996), and embedded academic literacy instruction (Carnegie Council on Advancing Adolescent Literacy 2010; Moje 2008; Wilfong 2009) were utilized to form the experimental instruction and curriculum sequence.

Students ($n=78$) in the comparison group received traditionally organized instruction which included teacher lectures accompanied by PowerPoint slides, student copying of PowerPoint content into notes, a Venn diagram conceptual organizer, whole-class interaction, independent reading and written answers to questions, and a short video clip. Instruction addressed identical curricular goals and was led by comparable instructors (e.g., male and female teachers with 1–8 years of teaching experience) in both groups; only the methods of instruction differed.

Engagement and quality of experience were measured using the ESM, at the end of each of five class sessions for the treatment group and at the completion of the whole instructional unit for the control group. The measure of *engagement* was the same as our previous studies (e.g., mean of concentration, interest, and enjoyment). Qualitative data was also obtained from students' and teachers' daily written reflection journals as well as the researcher's daily logs and observations of the learning environment.

The treatment intervention integrated the intentional targeting of interest development, backwards planning, and embedded academic literacy instruction. The primary goals of instructional intervention to: (1) Situate the inquiry, (2) Investigate and construct knowledge, (3) Select and synthesize knowledge, and (4) Generate and demonstrate knowledge, as described below.

1. **Situate the Inquiry: Make it Real and Relevant.** The first step of instruction is characterized by interesting, inquiry-provoking activity that elicits surprise and anticipation and later used to promote re-engagement. In this step, an authentic, problem-based scenario put a focus on the learning goal. At the beginning of the unit, the teacher captivated attention and generated quizzical comments when she entered the classroom wearing a doctor's surgical uniform and mask. The teacher then proceeded to dispense Glo Germ ™ (2010) into each student's hands. She approached each lab table and placed a portable ultraviolet lamp over students' hands to reveal the "glowing germs." After a hurried round of hand washing, students quickly returned to the black light to observe whether fewer germs remained. By asking students to not only explain what they think happened but also to write down what they still **"**wonder," the experiment provided an opportunity for the teacher to situate the inquiry, instigate thinking, and launch a unit on bacteria and viruses. Students enthusiastically recorded their inquiries on sticky notes and posted them on the wall, such as "Where do the germs come from?" "How can washing your hands kill viruses and bacteria?" and "Would you get sick more often if you didn't wash your hands?"

The teacher then invited students to turn to a partner and share their questions, then open their inquiry notebooks and generate some new conclusions together about what the experiment showed. Students were asked to compare responses paying attention to evidence that support claims. Explaining that one source of evidence can be other scientists' research findings, the teacher provided the students with an

engaging online article about hand washing. Using Smart Board technology to display the article, she engaged students in interactive annotation. First, she invited students to make a prediction, which was written in the top margin of the article. As students followed along, the teacher read aloud a small portion of the text, stopping periodically to verbalize her thinking and model the process of meaning making of the important ideas by circling key words, underlining, and commenting in the margins. In the process of thinking aloud, she wrote key terms on large sticky notes. Next, the teacher invited students to think with a partner and read the next small section of their hard copy of the text, circle key words, talk about why each idea was important, and write the important words on sticky notes. The classroom buzzed with reading and conversation as students determined what was important in the article. Students then annotated the remainder of the article independently and continued to contribute key words to what would become the on-going class conceptual organizer called the Generative Vocabulary Matrix (GVM) (Larson 2011) into which students added and reorganized vocabulary conceptually as new concepts merged with earlier understandings.

In keeping with the principles of backward design (Wiggins and McTighe 2005), the teacher announced the authentic performance assessment task that students would complete on the last day of the unit: Students would write a real-world science essay entitled, "What's All the Fuss About Hand Washing?" in the form of an editorial for the school newspaper.

2. **Investigate and Construct Knowledge: Keep it Engaging.** In this stage, fun, enjoyable engagement in meaningful group activity maintained interest generated previously, focused attention and persistence, and promoted personal involvement. Peer collaboration built knowledge and competence. The teacher asked students to sort inquiry questions written on sticky notes according to their scientific claim—for continual hand washing and against continual hand washing. She also returned to the GVM and guided students to reorganize the words according to claims and evidence. Then she asked students to use the new vocabulary and academic language with a partner and then put the ideas into writing in their inquiry notebooks.

To keep students engaged in a way that would help them gather meaningful information supporting their claim for their science essay, the teacher engaged students in a highly interactive task in which they simulated a pandemic. Students wandered randomly about the room, putting stickers on other students' arms to represent a viral infection and to "experience" cross-contamination. The number of infected students increased. A different sticker was introduced to represent the "vaccine," and the number of infected students decreased.

The classroom quietly hummed as students strolled and randomly "infected" other students. When cognitive and emotional energy were at a high peak, the teacher guided students to represent the data on personal bar graphs, write observations and interpretations of patterns they saw in the data, and discuss implications for public health. Teachers assisted students as they wrestled with academic language and vocabulary by providing oral cloze or "fill-in-the blanks," such as:

"As more people were vaccinated, the number of people who were infected … decreased."

Teachers encouraged academic language expansion by speaking directly to students about "bumping up" or expanding science language as ability and knowledge increased (Vygotsky 1978). Learning was elevated when students were supported and immersed in thinking and writing about content via complex levels of language rich with academic language, such as "there was an exponential decrease of humans infected with the virus as a result of an increase in inoculation throughout the population."

3. **Select and Synthesize Knowledge: Support Autonomy.** Support for autonomy was essential as students extended their investigations by independently exploring, choosing, and synthesizing multiple sources of information to support their personal position. Students read increasingly complex texts as knowledge and vocabulary skills increased. New challenges were adjusted to match skills within the students' zone of proximal development—keeping them in flow. Students became engaged in a variety of experiences to learn how to provide scientific information for defending a claim. The first was an examination of bacteria growth cultivated in petri dishes that was collected from locations in the school. Students used a Venn diagram to differentiate viruses and bacteria and worked together to write a compare-and-contrast paragraph in inquiry notebooks. Real-world connections were made to viral diseases such as swine flu, human immunodeficiency virus, and the common cold.

Students applied the interactive annotation strategy and engaged in circling claims and "boxing" evidence on hard copies of an article, which served as a model of text structure for students' upcoming essays. A wide variety of articles, science magazines, and library books as well as the course textbooks were displayed across a long stretch of counter on one side of the classroom. The texts were attractive, with colorful and clear photographs and illustrations. Students browsed and critically chose selections that provided evidence to support their chosen claim. The teacher was available for students, circulating around the room to support self-regulated learning. A relaxed tone was evident, as students used their developing capacity to comprehend more complex texts.

4. **Generate and Demonstrate Knowledge: Support Critical Literacy.** In this stage, critical thinking was supported through engaging activities. Students were more resourceful, self-regulating, constructive, and creative.

One activity that generated active engagement and use of complex language, vocabulary, and reasoning to effectively defend a claim was called "Take a Stand." Students moved to opposing sides of the room to represent their position "for" or "against" hand washing. Students reviewed their evidence with a partner before moving to the center of the room to engage in a lively debate with a person with an opposing position. In preparation for the final essay assignment, the teacher demonstrated how to write a persuasive science essay on the Smart Board with substantial class participation. Text structure for persuasive argument, content accuracy, and

use of academic language, vocabulary, and conventions were discussed and modeled.

To demonstrate conceptual understanding of science content, students in both conditions wrote science essays at the end of the unit in which they were directed to support a claim with scientific evidence in a scenario-based format. The format of the essay assessment was an article for the school newspaper entitled, "What's All the Fuss about Hand Washing?" Students were provided with a prompt to write their article. The writing prompt asked students to write from the perspective of a science writer for the school newspaper and take a position—whether or not hand washing is necessary— supported with scientific evidence. Most students began writing their science essays quickly and many wrote multiple pages. Essays were then evaluated with the Illinois State Achievement Test persuasive writing rubric.

ESM results revealed that students' quality of experience, including engagement, was significantly more positive for students in the treatment group receiving Academic Literacy Instruction sequenced with the *EngageALL* model. The difference in intrinsic interest, academic discourse, and engagement yielded large effect sizes. From the first day of the unit, the experience of the treatment group was characterized by academic belonging, intrinsic interest, and relaxation. Engagement, intrinsic interest, and flow were maintained throughout the unit. In the second half of the unit when students were participating in reading and writing activities using advanced academic language skills, high levels of academic discourse agency and generative learning orientation was achieved. At the end of the unit when students wrote their essays, they were "hitting on all cylinders" and reporting heightened levels of engagement as well as academic discourse agency, increased effort, intrinsic motivation, positive effect, and flow.

Conceptual understanding was significantly higher for the Academic Literacy/EngageALL treatment group compared to the traditional instruction group, and the effect size was also large. The treatment group gained also superior academic language proficiency, which was key to enhanced learning and conceptual understanding. For example, the treatment group used significantly more academic language and vocabulary words in their essays than the control group. Even more notably, this superior language use was associated with greater comprehension of biological concepts and reasoned thought in writing (e.g., maintaining a logical position, supporting claims with evidence, and using a clear organization) after controlling for gender and past achievement in reading and writing. Interestingly, many students used additional general academic language words beyond those words encountered in class, and these words were also significantly associated with conceptual understanding of science.

Overall, the treatment condition in Larson's study enacted many of the characteristics of optimal learning environments highlighted in previous chapters. Many of those characteristics, such as clear goals, situated tasks with domain-specific tools, and feedback were associated with engagement because they created the instructions for specific action or expression. The study suggests that engagement may be a critical mediator of language proficiency, conceptual understanding, and reasoned thought. Furthermore, it suggests that important principles of educational

psychology and motivation can be intentionally designed into instruction and curriculum to enhance student engagement with learning. The model reflected what Scardamalia and Bereiter (1996) and others have referred to as *knowledge-building communities*. The intervention classrooms buzzed with conversation and debate. Thinking, scientific evidence, and short summaries using academic vocabulary were recorded in inquiry notebooks; questions were jotted on sticky notes; and articles were marked up with circles, underlining, and arrows.

Meanwhile, charts, posters, markers, sticky notes, graphs, black lights, petri dishes, and a variety of attractive texts cluttered the room as students clustered themselves around lab tables to investigate their inquiries and debate real-world science issues. Slowly but surely, students habituated to the *culture* of a scientific community. While accumulating information would be sufficient for learning knowledge, and isolated activities would be sufficient for building circumscribed skills, students in the intervention group were educated in the broad sense of having an encounter with the cultural stock stored within the a given profession (Martin 2011)—in this case, the practices, beliefs, vocabulary, discourse, and modes of thought of scientists. That is, they became fully immersed in Stages 3 and 4 of their education.

Math

Math is an intrinsically engaging subject, or should be, in a similar way that science is. Because solving problems is an inherent goal of mathematics, a discovery approach that is at the foundation of "constructivist" activities is built in to it. Thus, there is an inherent orientation towards "problem-based learning." Just like reading, solving problems is one of the most commonly identified flow activities that is mental in nature. Those going into math, science, engineering, and other STEM professions frequently do so just because they love to solve problems. As one scientist Csikszentmihalyi (1996) interviewed explained, "Oh, I love to solve problems. If it is why our dishwasher does not work, or why the automobile does not work, or how nerves work, or anything. Now I am working on how hair cells work … it is so very interesting. I don't care what kind of problem it is. If I can solve it, it is fun. It really is a lot of fun to solve problems, isn't it?" (p. 114).

Unfortunately, math is not at all motivating for a large number of students. The main reason appears to be the complete absence of the kind of joy experienced when solving problems as described above. In fact, of all the school subjects, we found that high school students enjoy math the least of any subject, even though on average they reported higher challenge, importance, and concentration in math than in any subject, and yet at the same time reported (Shernoff et al. 2003). It stands to reason that because the intellectual intensity, challenge, and perceived importance of math is already high, math could be highly engaging for most students if it were also experienced as highly enjoyable. In other words, if math teachers did little else but assured that students would enjoy their present math instruction, they would likely have a winning formula for highly engaging classes.

In our ESM study of engagement in the traditional academic subjects in high school classrooms discussed in Chap. 6, some of the most engaging episodes we observed were in a high school math class. Even though the math class we observed appeared at first to use a lot of presentation and therefore "direct instruction," closer observation revealed that students were actively taking notes and/or solving problems while the teacher was at the board. What was actually occurring was that the teacher and students were solving problems *together*. The teacher exhibited a great deal of positive regard for the students, was not afraid to show his human side (instead of taking the persona of a human calculator), and used humor to great effect. Halfway through the class, students transitioned to a more outwardly interactive activity (e.g., independent problem solving in small groups) that was to follow. In this format, students provided valuable feedback and consultations to each other. In the community of learners created (see Chap. 6), individuals supported each other to meet the challenge inherent to the math problems. The work was clearly important to the whole community; the teacher would be reviewing the work and the students were eager to show what they could do on the upcoming test.

Some important advances in engaging basic mathematics instruction has been made in the context of the comprehensive Everyday Mathematics curriculum for elementary aged students (see www.wrightgroup.com). Everyday mathematics is essentially "constructivist" in its approach, seeking to help children build on their present knowledge over a period of time. Concrete materials, pictures, and oral statements are used to connect past and new knowledge. Interestingly, children might act out a problem or talk about how to get a feel of a problem. They might draw pictures or try to construct a model. The similarities of this approach to Wilhelm's (2008) approach to English instruction suggests that, regardless of subject, engagement is about sympathetically and imaginatively "entering the world" or "language" of a topic and, in a sense, "living in it."

Everyday mathematics differs from traditional, textbook-based instruction in several ways (Bell et al. 2007). Children are expected to master math skills and exhibit conceptual understanding but not the first time they are introduced to those skills and concepts. Rather, they revisit them and relate different concepts to each other as guided by their interests. Games and routines (e.g., schedules, calendars, whether and temperature records, attendance charts) are integral parts of the programmed designed to build conceptual understanding and largely replace the monotony of drills and worksheets. Problems are solved in everyday contexts using quantities and measurements rather than in purely symbolic form. Students work together in cooperative teams for projects and explorations. Good listening habits are emphasized as children build on each other's discoveries and ways of understanding. Sharing ideas for multiple ways of solving the same problem is encouraged. The same concepts are repeatedly presented in different ways, with multiple opportunities for a synthetic review. There are ongoing, informal assessments that take place through small group work. Finally, there is an attempt to form partnerships with parents and guardians, so that they can participate in the child's mathematical experiences at home.

Goldin et al. (2011) introduced the possibility that, in math instruction, students may have *engagement structures*, which are idealizations "involving a characteristic motivating desire or goal, actions including social behaviors toward fulfilling the desire, supporting beliefs, 'self-talk,' sequences of emotional states, meta-affect, strategies, and possible outcomes—a kind of *behavioral/affective/social constellation* situated in the person, becoming active in social contexts" (p. 548). Some specific examples of engagement structures based on observation, each with its own associated beliefs and "behavioral/affective/social constellation," are described by motivating desires, such as "Get The Job Done," "Look How Smart I Am," "Check This Out," "I'm Really Into This" (the engagement structure most identified with flow), "Don't Disrespect Me," "Stay Out of Trouble," "It's Not Fair," "Let Me Teach You," and "Pseudo-Engagement." Structures like these are suggested to be mechanisms whereby motivating desires and beliefs have reciprocal influences on in-the-moment mathematical engagement.

By examining three such engagement structures during mathematics instruction, Rossman et al. (2011) provided some pedagogical clues for supporting engagement in middle school math classrooms. The engagement structures on which they focused were referred to as "Look How Smart I Am" (LHSIA), "I'm Right and You are Wrong" (IRYW), and "Let Me Teach You" (LMTY). LHSIA describes the inclination for a student to seize opportunities showing that he or she knows more than others in the group. IRYW describes the inclination for a student to show that his or her solution or strategy is correct while that of others is incorrect. LMTY describes the desire for a student to teach others in the group things they may not know or a characterizing desire for nurturance. Whereas students with the first two engagement structures gain satisfaction from dominance, those with a LMTY structure gain satisfaction from helping someone.

Four math teachers and their students in New Jersey middle schools serving a high percentage of minority students living in poverty participated in Rossman et al.'s (2011) study. Student participants first completed surveys assessing their engagement structure. They were then randomly assigned to small groups of three or four. They then proceeded to work on a variety of math tasks, such as one asking them to generalize a mathematical rule about how many cube blocks would be necessary to create larger and larger towers of the same design. The small group interactions were videotaped and group interactions for two small groups were analyzed from the video. Engagement structures were inferred qualitatively from the videotape as well as from the questionnaires.

Some students clearly exhibited the desire to show that their way of solving the problem was better than that of their fellow group members. Questionnaire results showed that for many of these students, the LHSIA and IRYW structure characterized their motivating desires all of the time or almost all of the time. The interactions of other students appeared to be characterized by the LMTY structure. Both types of students frequently believed that they had the correct solution. However, students with the first two structures frequently restated their solution without trying to explain it. Most of their actions were directed towards confirming that they had the correct strategy or showing that those of others were incorrect.

A primary difference between these students and those with LMTY structures was the amount of explanation the latter students gave. LMTY students persisted with different sorts of explanations step by step until their group mates were successfully able to move on to the next step. For example, if it was not sufficient to explain how to count up the blocks, these students would try to teach from a different angle and ask different sorts of guiding questions until other students overcame a conceptual barrier. Survey results revealed that the students of this type analyzed were motivated to "teach" or "help" other students learn the math all or almost all of the time, suggesting a higher level of intrinsic motivation and engagement than the students with other types of engagement structures.

The study suggests that an authentic learning community, or community of practice at the heart of optimal learning environments (particularly for a Stage 3 education), is facilitated by encouraging students to be motivated to teach and help rather than showing their individual dominance and superiority. While this particular study does not comment on the extent to which engagement structures are trainable and influenced by the environment, it will not escape notice that the engagement structures parallel achievement goal structures to a large extent. For example, performance goals are also characterized as the desire to show how smart one is or that one is right while others are wrong, while the LMTY structure would appear to have more in common with mastery than performance goals. Nevertheless, multiple studies suggest strategies to promote a mastery goal orientation and/or reduce a performance goal orientation in the classroom (e.g., Ames 1992; Ames and Archer 1988; Harackiewicz et al. 2008; Hulleman et al. 2008). In addition, it would not be unreasonable for teachers to experiment with making teaching as well as learning/mastery goals an explicit goal of math instruction in small groups in order to promote optimal learning environments of the type we observed in high school math classrooms.

Conclusion

Teachers may understandably wonder how to facilitate student engagement in their particular topic. Approaches that emphasize the passive learning of information and knowledge not only fail to engage students but also threaten to make schools an obsolete form for learning. A five-stage model of engagement with learning presented in this chapter suggests that a primary developmental learning goal in the adolescent years is learning domain-specific talents and skills, and that such learning is primarily episodic—that is, learned through experiential "episodes" characterized by a unique movement, rhythm, action, and logic. In this chapter, one example modeling this was an approach to English literature in which "resistant readers" were reached through role plays and other dramatic and artistic activities in which students felt to be "actually" interacting with the characters, forming a deeper understanding the author's perspective and existential questions. As individuals transition into emerging adulthood, a primary developmental goal becomes

engagement in vocational or professional mastery. This sort of engagement typically occurs within a *community of practice* or in the context of daily practice of a shared domain of human endeavor with other like-minded professionals. In the example from science presented in this chapter, the construction of a knowledge-building community (a community of practice focusing on the discovery of new knowledge) was intentionally designed into a high school biology curriculum. This engaged students in the conjoint practice, with peers and teachers, of taking notes providing clues to discovery and keeping inquiry notebooks, expressing scientific thinking with scientific vocabulary, evaluating scientific evidence, and writing essays addressing real-life problems through the lens of a scientist. Evidence of increased engagement during these approaches was supported through empirical studies.

References

Albert Shanker Institute. (2003). *Education for democracy*. Washington, DC: Albert Shanker Institute.

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*(3), 261–271.

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology, 80*(3), 260–267.

Bell, M., Bell, J., Bretzlauf, J., Dillard, A., Flanders, J., & Hartfield, R. (2007). *Everyday mathematics teacher's reference manual grades 4–6*. New York: McGraw Hill Wright Group.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42.

Carnegie Council on Advancing Adolescent Literacy. (2010). *Time to act: An agenda for advancing adolescent literacy for college and career success*. New York: Carnagie Corporation of New York.

Constitutional Rights Foundation. (n.d.). *Addressing the civic education opportunity gap.* Los Angeles: Constitutional Rights Foundation.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Perennial.

Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. New York: HarperCollins.

Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1993). *Talented teenagers: The roots of success and failure*. New York: Cambridge University Press.

Dewey, J. (1902/1990). *The child and the curriculum*. Chicago: University of Chicago Press.

Dewey, J. (1916/1944). *Democracy and education: An introduction to the philosophy of education* (1st Free Press paperback ed.). New York: Collier-Macmillan.

Dewey, J. (1943/1990). *The school and society and the child and the curriculum* (2nd ed.). Chicago: University of Chicago Press.

Einstein, A. (1954). *Ideas and opinions* (Modern Library ed.). New York: Modern Library.

Erikson, E. H. (1958). *Young man Luther: A study in psychoanalysis and history* (1st ed.). New York: Norton.

Goldin, G. A., Yakov, E. M., Schorr, R. Y., & Warner, L. B. (2011). Beliefs and engagement structures: Behind the affective dimension of mathematical learning. *ZDM Mathematics Education, 43*, 547–560. doi:10.1007/s11858-011-0348-z.

Harackiewicz, J. M., Durik, A. M., Barron, K. E., Linnenbrink-Garcia, L., & Tauer, J. M. (2008). The role of achievement goals in the development of interest: Reciprocal relations between achievement goals, interest, and performance. *Journal of Educational Psychology, 100*(1), 105–122.

Hidi, S., & Renninger. K. A. (2006). The four-phase model of interest development. *Educational Psychologist, 41*(2), 111–127. doi: 10.1207/s15326985ep4102_4

Hulleman, C. S., Durik, A. M., Schweigert, S. B., & Harackiewicz, J. M. (2008). Task values, achievement goals, and interest: An integrative analysis. *Journal of Educational Psychology, 100*, 398–416. doi:10.1037/0022-0663.100.2.398.

Kahne, J., & Middaugh, E. (2008). *Democracy for some: The civic opportunity gap in high school. Circle working paper 59*. Washington, DC: The Center for Information and Research on Civic Learning.

Kahne, J., Chi, B., & Middaugh, E. (2006). Building social capital for civic and political engagement: The potential of high-school civics courses. *Canadian Journal of Education, 29*(2), 387–409.

Kessler, R. (2000). *The soul of education: Helping students find connection, compassion, and character at school*. Alexandria: ASCD.

Larson, S. C. (2011). *Academic literacy instruction: Engagement for learning in high school biology*. Saarbrucken: Lambert Academic Publishing.

Lave, J. (1988). *Cognition in practice*. Cambridge: Cambridge University Press.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Levinson, M. (2009, April). "You have the right to struggle": *The construction of historical counternarratives as a tool for civic empowerment.* Paper presented at the annual meeting of the Americal Educational Research Association, San Diego.

Martin, J. R. (2011). *Education reconfigured: Cuture, encounter, and change*. New York: Routledge.

Moje, E. B. (2008). Foregrounding the disciplines in secondary literacy teaching and learning: A call for change. *Journal of Adolsecent and Adult Literacy, 52*(2), 96–107.

Nakamura, J., & Shernoff, D. J. (2009). *Good mentoring: Fostering excellent practice in higher education*. San Francisco: Jossey-Bass.

Obama, B. (2008). *A more perfect union*. Accessed July 14, 2011, from http://www.npr.org/templates/story/story.php?storyId=88478467

Palincsar, A. S., & Herrenkohl, L. R. (1999). Designing collaborative learning contexts. *Theory into Practice, 41*(1), 26–32.

Rogoff, B., Baker-Sennett, J., Lacasa, P., & Goldsmith, D. (1995). Development through participation in sociocultural activity. *Cultural practices as contexts for development, 67*, 45–65.

Rosenblatt, L. (1978). *The reader, the text, the poem: The transactional theory of literary work*. Carbondale: Southern Illinois University Press.

Rossman, C. F., Schorr, R. Y., & Warner, L. B. (2011, April). *Working with a partner: An investigation of student engagement in a middle school math classroom.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Rubin, B. (2009, April). *From "no backpacks" to "murder": Studying civic problems across diverse contexts.* Paper presented at the annual meeting of the American Educational Research Association, San Diego.

Scardamalia, M., & Bereiter, C. (1996). Engaging students in a knowledge society. *Educational Leadership, 54*(3), 6–10.

Shernoff, D. J., Knauth, S., & Makris, E. (2000). The quality of classroom experiences. In M. Csikszentmihalyi & B. Schneider (Eds.), *Becoming adult: How teenagers prepare for the world of work* (pp. 141–164). New York: Basic Books.

Shernoff, D. J., Csikszentmihalyi, M., Schneider, B., & Shernoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18*(2), 158–176.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press.
Wiggins, G., & McTighe, J. (2005). *Understanding by design, expanded 2nd edition*. Alexandria, VA: Association for Supervision and Curriculum Development.
Wilfong, L. G. (2009). Textmasters: Bringing literature circles to textbook reading across the curriuculum. *Journal of Adolescent and Adult Literacy, 53*(2), 164–171.
Wilhelm, J. D. (2008). *"You gotta be the book": Teaching engaged and reflecive reading with adolescents* (2nd ed.). New York: Teachers College Press.
Wilhelm, J. D., & Novak, B. (2011). *Teaching literacy for love and wisdom: Being the book and being the change*. New York: Teachers College Press.
Wilhelm, J. D., Baker, T. N., & Dube, J. (2001). *Strategic reading: Guiding students to lifelong literacy, 6–12*. Portsmouth: Heinemann.
Willingham, D. T. (2009). *Why students don't like school*. San Francisco: Jossey-Bass.
Wright, J. (2003). *Confusing god and government*. Accessed October 25, 2012, from http://www.sluggy.net/forum/viewtopic.php?p=315691&sid=4b3e97ace4ee8cee02bd6850e52f50b7Sermon

Chapter 9
Engagement Beyond the Core Academic Subjects

Introduction

Continuing from examples of engaging approaches to core academic subjects discussed in Chap. 8, in this chapter, we discuss engaging approaches in three nonacademic subjects: art, vocational education, and curricula in social and emotional well-being. We discuss art only briefly as the primary example, The Lifelines Community Arts Project, is an after-school program presented in Chap. 13. The example from vocational education includes a study of the Cristo Rey corporate work-study program; and the examples of curricula in social and emotional well-being include a variety of interventions to facilitate positive psychology (e.g., gratitude interventions), such as The Penn Resiliency Program, and the Geelong Grammar School in Australia.

Art

Traditional art instruction in high school classes has almost the opposite experiential profile as math (See Chap. 8): Students report enjoying it and otherwise have a positive emotional response to it, but they do not find it to be challenging or important. Therefore, the general prescription for engaging art instruction is the opposite of math, where the primary suggestion was to facilitate conditions for enjoyment. For art instruction, what is most needed is to facilitate conditions by which students will attach greater significance and meaning to activities. One example is to promote understanding of the long tradition of art as social commentary, in which case the purpose of the art has a communicative function the artist regards as important. Of course, actually practicing the making of art as social commentary would be the most important part of this approach. An excellent example of art as a mediator of critical thinking about cultural assumptions and societal scripts through art can be found in Barone's (2001) book, *Touching Eternity: The Enduring Outcomes of*

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Teaching. Although the focus of this worthwhile book is on the enduring impacts of a great teacher, it reminds us that, just as engaging instruction in English is about much more than just literacy, effective and enduring art instruction can be as much about appreciating aesthetic beauty and utility; seeing life in new perspectives; and being open to unlimited possibilities for the future, including one's own as it is about art instruction narrowly defined.

In general, to transition from Stage 2 to Stage 3 and 4 art education (See Chap. 8), students would create works of art in association with practicing artists, learning about the cultural heritage of different artistic traditions along the way. One example of such an art program is the Lifelines Community Arts Project ("Lifelines"), operated by the Center for Family Life in Sunset Park, Brooklyn. A unique feature of this program is that it commissions professional artists to serve as the master artists at the top of an apprenticeship and mentoring hierarchy who also interact with teachers to integrate an art component into the instruction of all academic subjects. Because this is primarily an after-school program, it is discussed in more detail in Chap. 13, and we do not go into detail about it here. However, the program is a useful illustration that art is perhaps best thought of not as its own circumscribed subject, but as a medium for expression that can help stir the imagination about any topic worthy of attention.

Vocational Education

By international standards, American adolescents spend a good deal of time working. For example, they spend three to five times more time working than Russian and Japanese adolescents, who rarely engage in paid work (Csikszentmihalyi and Larson 1984). Despite research results backing the claim of detrimental effects associated with teen employment (e.g., Lamborn et al. 1992), the question of whether there are also benefits, and if the benefits might outweigh the costs, is a highly debated question. Many believe that working during adolescence provides useful life experiences, such as taking on adult responsibility (e.g., dependability), time management skills, earning and managing money, and other "soft" skills like social and emotional skills. When asked about their view on this question, the undergraduate students in my course mostly are supportive of teens working, believing that their adolescent work experiences were more beneficial than costly to their own development. However, if we take an ecological perspective on the quality of students' experiences while working, ESM studies suggest that there are actually few places where students are less engaged or experience flow less frequently than during paid work (Schmidt et al. 2007).

With paid work having some serious costs as well as benefits, and with few jobs for teens offering real training or connections to future careers, there is a minimal gap between the world of school and the world of careers. The gap is

grounded in the history of vocational and technical education in the United States, which was separated out from a college preparatory education for much of the twentieth century, requiring students to choose one pathway or the other (Bempechat et al. 2014). While the benefits versus costs of vocational experiences during adolescence has been debated, most recently in the context of No Child Left Behind legislation emphasizing academic preparation, we might observe the debate itself as symptomatic of a gap between school and work representing a major source of waste in schools in the Deweyan sense. The separation of the entire adolescent population from the world of work ever since Child Labor Laws, and the advent of compulsory education in the United States at the turn of the twentieth century, can be seen as constituting a cultural, economic, and educational waste of massive proportions. In other words, the adolescent population is a colossal human resource for its energies and efforts for it to be relegated only to training and "practice" for the "real event" (i.e., adulthood), cut off from serving the community in a way that is valued.

One compelling initiative developed in recent years to redress the relative isolation of school and work has been career development education in which efforts are made to foster career goals through enhanced, targeted educational experiences (Baker and Taylor 1998; Bempechat et al. 2009). Supported by theories of motivation stressing that activities with utility value are motivating (e.g., Wigfield and Eccles 2000), the hope is that as students explore career opportunities and come to understand the value of school subjects to their future career choices, any or all previously uninteresting school subjects may become more engaging (Lapan et al. 2002). As Lapan (2004) proposed, vocational planning and positive expectations in particular may bring a sense of purpose, opportunity, and choice to youth who otherwise feel academically discouraged. In support of this hypothesis, Kenny et al. (2006) found that high levels of career planfulness and expectations in the context of a career planning intervention for ninth graders in two ethnically diverse urban high schools was associated with increased school engagement over the course of the year. Career exploration was found to be a critical source of school engagement for urban minority students in particular (Perry 2008). These results are consistent with two meta-analyses since the 1990s demonstrating that career education interventions positively affect academic achievement, suggesting that students are better prepared and more inclined to succeed when they can connect their school experiences with their career paths (Baker and Taylor 1998; Evans and Burck 1992). Overall, the research evidence strongly supports continued attention to intentional career development education in research and policy discussions about school reform (Kenny et al. 2006).

Another extremely promising model is work-based learning, such as the Cristo Rey corporate work-study program situated in Catholic Schools. Catholic schools have some ideal characteristics for such a program, including a generally high level of scholastic achievement and proficiency, and a strong sense of community bonding together students, their families, and school staff and administrators (Bempechat et al. 2014). Jesuits in Chicago designed a school–corporate partnership program in

1996 to allow for students with limited means to fund their private, Catholic school education. Sponsoring corporations and nonprofits covered these students' tuition costs and in return the student worked 5 days per month at an entry-level position. Four students time-share a single entry-level position and are closely supervised by an assigned mentor. Today, The Cristo Rey Network is comprised of 24 schools serving 6,500 students nationwide, includes 1,500 corporate and 21 university partners, and is supported by large and small foundations. Students follow a college preparatory curriculum and the job-share work-study program starting in the ninth grade.

In their mixed-method, cross-sectional and longitudinal study of the Cristo Rey corporate work-study model, Bempechat and colleagues (2014) found that the participating students as well as alumni and teachers whom they interviewed all attested to varied ways that the program fostered psychosocial growth and well-being, including greater maturity and responsibility bolstered by a stronger orientation towards the future. Corroborating environmental challenge and support as essential to engagement, findings from multiple sources converged to show that care and warmth in conjunction with high standards for learning were the cornerstones of an enhanced educational experience in both the school and workplace. Students indicated that their teachers in the program took a real interest in them and their futures as respected individuals, and reciprocally, they had high regard and appreciation for their teachers. Many students felt that their corporate supervisor took on the role of mentor and advocated for their success at school as well as for their future careers. Overall, the experience increased their focus, commitment, and determination to attend college as the next step towards their desired career. Indeed, all 25 student participants, who were high school seniors, later enrolled to a 2-year or 4-year college. Survey data also corroborated the overall finding that the supportive environment created by the school, teachers, and fellow students significantly contributed to positive student attitudes and student engagement. School engagement was also related to future work plans, aspirations of reaching career goals, and confidence in the ability to reach them.

With respect to the debate over teens working or not working, it appeared that participants of the Cristo Rey program got the best of both worlds: They built the skills and awareness that accompanies real work experiences while also increasing their academic focus. The theme that was expressed repeatedly by the teachers and mentors during interviews, perhaps not unrelated to the participants' ability to handle both school and work responsibilities well, was the high degree of maturity the participants exhibited.

As a conduit for social supports and resources, instrumental support from caring adults, and knowledge about the connection between work and school, the Cristo Rey program may offer guidance for reform efforts with respect to vocational education and school engagement. Consistent with much previous research, student engagement was increased when students understood the relevance of academics to their future lives, something particularly difficult for students in need.

Curricula in Social and Emotional Well-Being

So far, our discussion of engagement in traditional subjects may appear to imply that the most important thing is how subjects are approached: that instruction is the critical part of Curriculum and Instruction. This is far from the case, however. Although it is true that curriculum receives a fraction of the research attention that instruction and pedagogy do when it comes to influences on motivation and engagement, I believe that curriculum, or the "what" of engagement, deserves far more attention. In general, adolescent-aged students are extremely engaged by, and seldom tire of talking about, topics bearing on real life. Most are very curious about topics relating to their own well-being and development, as adolescents are deeply introspective and preoccupied with their self-understanding (Harter 2006).

The growing field of positive psychology can lend a great deal of help in this regard since positive well-being is its focus, and an impressive amount of science has begun to undergird it (e.g., Csiskzentmihalyi and Csikszentmihalyi 2006; Gilman et al. 2009; Lopez and Snyder 2009; Peterson 2006; Peterson and Seligman 2004; Seligman 2002; Seligman and Csikszentmihalyi 2000; Snyder and Lopez 2002; Snyder et al. 2011). Teachers can facilitate the motivation of the "whole child" by encouraging the imagination of possible selves and by intentionally fostering appreciation, creativity, and optimism (Biswas-Diener and Dean 2007). Indeed, there have already been a number of applications of positive psychology to education invoking reverence for aspects of humanity adolescents find to be great, admirable, or powerful in a highly personal way (Gilman et al. 2009). The goal is to create the sense of wonder, amazement, and awe which Einstein believed was the best and most important type of motivation for what is best in humanity. Indeed, wonder, awe, reverence, joy, gratitude, love, compassion, forgiveness, and mindfulness are only a few of the multitude of positive psychology topics studied by positive psychologists (Emmons 2006) and ripe for examination by adolescents. From the standpoint of engagement, adolescents should not have to wait until college to delve into such topics of potentially high interest and inspiration.

Moreover, we should expose adolescents to positive psychology and studies about well-being because we want them to be well and psychologically healthy. We want to help them develop wonder, awe, reverence, joy, gratitude, love, compassion, forgiveness, and mindfulness. Mindfulness alone, or enhanced awareness and attention to the present, is intimately connected to powers of engagement. Moreover, research suggests that habits like mindfulness can be consciously cultivated or taught (Brown and Ryan 2003). Some would argue that if we omit spiritual topics and qualities like wonder, awe, and compassion from the study of human behavior, we leave out the most fundamental aspect of our humanness (Bergin 1997). Indirectly, the spiritual life of the student can be the very essence of curricula about the sources of human happiness and strength.

A good illustration of how instructional activities based on positive psychology can promote personal well-being and fulfillment is provided by research on educational interventions to foster gratitude (Froh et al. 2008, 2009, 2010, 2011a, b; Wood

et al. 2010). For example, Froh et al. (2008) examined the effects of activities to help youth "count their blessings" by assigning 221 early adolescents to a gratitude condition, hassles condition, or a control condition. Students in the gratitude condition were asked to list five things in their life, both large and small, which they were grateful about. Those in the hassles condition listed five irritants or annoyances over the last day. The control group neither counted their blessings nor their burdens. The entire sample completed survey measures rating their gratitude, affect, life satisfaction, and a variety of other measures of emotional well-being at three different time points: before the intervention, every day during the 2-week intervention, and at a 3-week follow up posttest after the intervention. The gratitude condition was positively associated with positive affect, life satisfaction, optimism, social support, and prosocial behavior and negatively associated with physical symptoms. Students in the gratitude and control condition reported less negative affect than those in the hassles condition at posttest. Perhaps most significantly with respect to school engagement, satisfaction with school experiences was higher for students in the gratitude condition than those in hassles or control condition. Suggesting that school was not absent from their list of blessings, students who counted them were more likely to appreciate their school experiences as well as other life experiences.

Interventions in the context of empirical studies are one thing; a good question is if well-being and greater life satisfaction can be intentionally taught in the context of a full-blown curriculum. Seligman and colleagues (2009) answer this question in the affirmative, based primarily on their experience with and the research results of the Penn Resiliency Program (PRP) and the Strath Haven Positive Psychology Program. The major goal of the PRP curriculum is to increase students' abilities to cope with common adolescent stressors and problems and decrease depression in the process. It strives to teach students to think realistically and flexibly about their problems. Some of the skills and strategies that are taught explicitly include creative brainstorming, effective decision making, and relaxation. One of the most researched educational programs to prevent depression has been evaluated by 17 studies in the past 20 years focusing on over 2,000 participants between the ages of 8 and 15, most utilizing randomized controlled designs. A meta-analysis of the 17 studies (Brunwasser and Gillham 2008) reported that the program yielded significant benefits in terms of preventing depression, anxiety, and behavioral problems and that it significantly reduced hopelessness while increasing optimism.

Building on these efforts targeting prevention, the Positive Psychology Program was the first empirical study of a fully developed high school Positive Psychology curriculum (Seligman et al. 2009). The curriculum is designed primarily to help students identify their *signature character strengths* (Peterson and Seligman 2004; Seligman 2002) and to increase the uses of those strengths. In addition, the curriculum strives to promote resilience, positive emotion, and sense of meaning or purpose. It consists of approximately twenty to twenty-five 80-min lessons taken in the ninth grade year. Most of the class sessions involve a discussion of character strengths, in-class activities, homework to apply concepts and skills to their own lives, and the keeping of a reflection journal. For example, similar to the gratitude intervention, students are asked to write down three good things that happened each

day for a week, both large and small in importance. With each event, they are then asked to reflect and write about why it happened and what it meant to them. Because the fundamental belief is that students will gain more life satisfaction by identifying their greatest strengths and employing them as much as possible, several lessons focus on testing for signature strengths and using them in new ways to overcome challenges.

In the study of the Positive Psychology Program (Seligman et al. 2009), ninth grade students ($N = 347$) were randomly assigned to Language Arts classes that utilized the positive psychology curriculum (Positive Psychology condition) or those that did not (control condition). Questionnaires measured a variety of strengths (e.g., love of learning, kindness), social skills, behavioral problems and enjoyment of school, and school grades were collected. Results showed that the Positive Psychology Program increased students' reports of enjoyment and engagement in school, and it improved strengths related to learning and engagement in school (e.g., curiosity, love of learning, creativity). The program also served to improve social skills such as empathy, cooperation, assertiveness, and self-control. Among students in nonhonors classes, the program also increased achievement in Language Arts through 11th grade. It appeared that the curriculum serving to enhance well-being did not interfere with traditional academic learning but, on the contrary, enhanced it (Seligman et al. 2009).

More recently, Seligman and colleagues have attempted to institute a school-wide mission and curricular philosophy based on positive psychology in a private grammar school in Melbourne, Australia, called the Geelong Grammar School (Seligman et al. 2009). Teachers and staff underwent an extensive training provided by 15 positive psychology trainers and dozens of visiting scholar experts to infuse the entire school with principles of positive psychology. Although no systematic studies of the school have yet been reported, the description of the school is compelling. Stand-alone courses teach various elements of positive psychology including resilience, gratitude, meaning, flow, positive relationships, and positive emotions. For example, one stand-alone course provides an extensive training on resilience. A year-round Positive Education class was taught twice weekly by the heads of the ten boarding houses, similar to the Positive Psychology Program, centered on discovering and using signature strengths. For example, students wrote narratives about times that they were at their best and then after completing the VIA signature strengths test (www.authentichappiness.org), reevaluated their narratives and found several examples of their signature strengths. Students in this class also interviewed family members and developed "family trees" of strengths. They also identified campus leaders whom they considered paragons of each strength.

Following this, the next lessons focused on building positive emotion. Students kept a blessings journal, now a staple of the school, and wrote gratitude letters to parents. They learned how to savor memories, how to overcome negativity, and how gratifying it can be to give kindness. Students then worked on active constructive responding (ACR) upon reports of good events by a friend (Gable et al. 2004) and generating comments and thoughts in a positive-to-negative ratio of 3:1 (Fredrickson and Losada 2005).

At the Geelong School, teachers and administrators also seek to embed "positive education" into academic courses, sports, counseling, music, and in the chapel. Similar to the example of Wilhelm's (2008) approach to English education, for example, teachers use signature strengths and principles of resiliency to discuss novels. In geography class, students considered how the geography of green space might contribute towards well-being. In foreign language classes, character strengths were examined in the context of different cultures. Music teachers used resilience skills to rebuild confidence and optimism if a performance did not go well. Art teachers taught the savoring of beauty. Coaches taught the importance of letting go of grudges against teammates who did not perform well. Others used calmness techniques before a game or refocusing strategies to overcome negative reactions and foster consistent play. Scriptural passages and sermons in the chapel were matched to themes being emphasized in classes, such as courage, forgiveness, or persistence. Students even nominated classmates displaying a "strength of the week."

There can be little question that the intrinsic appeal of curricula rooted in positive psychology or promoting well-being is due to the fact that they provide a corrective to the mainstream educational tradition. That tradition, in general, has emphasized "what is wrong?" especially with respect to students (e.g., wrong answers, lack of knowledge, lack of proficiency, all of which the school attempts to "fix"). Mistakes are not seen as growth opportunities so much as evidence of a poorer evaluation relative to one's peers. Thus, "positive education" has the same appeal in the face of education's history of emphasizing student deficits which positive psychology does in responding to psychology's historical focus of psychology on psychoses, neuroses, and other mental illnesses. Perhaps educators are beginning to recognize that how youth feel about themselves is an important part of the educational profession. When we come to recognize that "how well they are feeling" is at least as important as "how well they are doing" (i.e., in school), the sentiment might begin to have some impact.

The advantage we have in terms of what we now know, courtesy of research in positive psychology and elsewhere, is that how we feel about ourselves is malleable. For example, the extensive resilience training mentioned above in the context of the Geelong School is based on the ABC model, used to reflect upon and adjust one's explanatory style when interpreting obstacles and personal successes and failures (Ellis 1962). "A" stands for the "adversity" that one encounters, "B" stands for one's "beliefs" about the adversity, and "C" stands for the "consequences" of those beliefs. Seligman (1990) has demonstrated that these beliefs are learned and sustained through cognitive processes; and therefore, reversing negative belief patterns can also be a learned cognitive process. Thus, perhaps the most important part of the model is the addition of a "D"—debunking pessimistic beliefs. These beliefs are like little arguments, explanations, or rationales one makes to oneself, often reflecting one's beliefs about future success and one's self-esteem in the process. But they can be rejected as easily as they are accepted. Our beliefs and the meanings we make not only involve some degree of free choice (Frankl 1959/2006) and therefore are individually trainable as with resilience interventions. However, they are also highly influenced by the prevailing ethos and attitudes within the environment, especially as modeled by adults. Valuing one's self and others is to some degree a

skill; but it is also a disposition, a product of cultural or institutional norms as much as the individuals within it.

In recent years, due attention has also been given to notions of emotional intelligence or the ability to identify, assess, monitor, and control the emotions of one's self and others (Goleman 1995). Increasingly, forms of emotional intelligence are seen as synergistic with a variety of social competencies and markers of success, such as positive interactions with others (Lopes et al. 2004b) and navigating one's social world better (Lopes et al. 2004a). There has been an educational movement in recent years to address students' "social and emotional learning" or SEL. SEL programs attempt to teach students skills such as problem solving, conflict resolution, responsible decision making, relationship building, and goal setting (see http://casel.org/). Although many people agree on the need for this well-intended movement, there are detractors as well as supporters of it. The main issue appears to be whether or not SEL learning is taught as an add-on or appendage, requiring teachers to leave their academic areas of comfort to teach skills they are not as prepared to teach. Many of the examples provided in this book, including the teaching of positive psychology in the Geelong Grammar school in Melbourne (Seligman et al. 2009) and several other whole-school models presented in the following chapters, suggest a more integrated approach to student behavior inevitably having a preventative effect on the a variety of school problems including of challenging behaviors, school violence, bullying, and of course, disengagement and school dropout—before they become problems.

Minimally, it is obvious that the public school system is adopting a somewhat fragmented rather than a holistic approach to fostering optimal developmental contexts for engagement if it promotes SEL, on the one hand, while continuing to slash funding for physical education, the arts, and after-school programs, on the other. One's physical conditioning is increasingly recognized as essential to regulating one's emotional and mental well-being, no less important than social and emotional skills for both learning and well-being. Vigorous exercise is related to school engagement in high school specifically (Carter et al. 2007). And the therapeutic value of the arts in productively channeling emotions is also widely recognized.

One key issue important for promoting the developmental well-being of students is not only their ability to focus attentional resources, but also determining the important things on which to focus. The master or meta-level skill governing not only social and emotional competencies, but also academic, work-related, and extracurricular ones, is that of executive processing or self-regulation. Meta-level self-regulatory skills, which is receiving increased attention, so far has been conceptualized as the ability to effectively make goals and strategies to reach those goals (e.g., Schmid et al. 2010). However, we may find in the future that in addition to goal setting and strategizing, it is the *valuing* and *prioritizing* of multiple goals that becomes the most important skill of all as all children have to juggle with more and more goals, time demands, and potential distractions. To some degree, fighting off distractions involves skill and discipline; however, prioritizing stems from one's values. Thus, integrated educational approaches centered around guiding values like happiness, compassion, gratitude, and forgiveness may become all the more important as time goes on.

Conclusion

Examples of engaging approaches to nonacademic subjects presented in this chapter help to illuminate the variety of ways and contexts in which students become engaged with learning. The study of the Cristo Rey model of vocational education supports the view that the students participating in the work-study program built important competencies for succeeding in life as well as work, such as social and emotional skills, time management, communication, and networking skills. Students learned professional comportment and how to behave appropriately around adults more generally. One unique benefit of the program was the highly motivating effect of the corporate role models that students sought to emulate, according to teachers who observed them. Most importantly, students saw the connections between school and work and became more interested and engaged in specific courses after understanding its relation to what certain jobs require.

In terms of curricula in social and emotional well-being, studies suggest that it is possible to both increase positive psychological inclinations, such as the feeling of gratitude, as well as mitigate destructive psychological tendencies such as depression and anxiety through educational interventions. The Geelong Grammar School in Melbourne, Australia, is a whole-school model in which teachers and administrators seek to embed "positive education" and Seligman's conception of signature strengths into all aspects of campus life, from academic courses to sports to music to the chapel. The school helps students to enact positive teachings offered by cognitive psychology such as debunking pessimistic beliefs. The Geelong model suggests that social and emotional teaching and learning is more authentic when integrated into all aspects of school culture as opposed to being offered as an appendage to an otherwise academic and rigid curriculum. Both education in physical health as well as training in executive processes to develop, value, and prioritize goals can be important facets of social and emotional learning to facilitate the engagement and positive development of youth.

References

Baker, S. B., & Taylor, J. G. (1998). Effects of career education interventions: A meta-analysis. *Career Development Quarterly, 46*, 376–385.

Barone, T. (2001). *Touching eternity: The enduring outcomes of teaching*. New York: Teachers College Press.

Bempechat, J., Kenny, M., Blustein, D., Seltzer, J., Gualdrón-Murhib, L. G., Murphy, K. A., et al. (2009, April). *Enhancing the school-to-work connection* via *work-based learning.* Paper presented at the annual meeting of the American Educational Research Association, San Diego.

Bempechat, J., Kenny, M. E., Blustein, D. L., & Seltzer, J. R. (2014). Fostering positive youth development through work-based learning: The Cristo Rey model. In D. J. Shernoff, & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbook by Teachers College Record.

Bergin, A. E. (1997). Preface. In P. S. Richards & A. E. Bergin (Eds.), *A spiritual strategy for counseling and psychotherapy*. Washington, DC: American Psychological Association.

Biswas-Diener, R., & Dean, B. (2007). *Positive psychology coaching: Putting the science of happiness to work for your clients*. Hoboken: Wiley.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822–848. doi:10.1037/0022-3514.84.4.822.

Brunwasser, S. M., & Gillham, J. E. (2008). *A meta-analytic review of the Penn Resiliency Program.* Paper presented at the Society for Prevention Research, San Francisco.

Carter, M., McGee, R., Taylor, B., & Williams, S. (2007). Health outcomes in adolescence: Associations with family, friends and school engagement. *Journal of Adolescence, 30*, 51–62. doi:10.1016/j.adolescence.2005.04.002.

Csikszentmihalyi, M., & Larson, R. (1984). *Being adolescent: Conflict and growth in the teenage years*. New York: Basic Books.

Csiskzentmihalyi, M., & Csikszentmihalyi, I. S. (Eds.). (2006). *A life worth living: Contributions to positive psychology*. Oxford, UK: Oxford University Press.

Ellis, A. (1962). *Reason and emotion in psychotherapy*. New York: Lyle Stuart.

Emmons, R. A. (2006). Spirituality: Recent progress. In M. Csiskzentmihalyi & I. S. Csikszentmihalyi (Eds.), *A life worth living: Contributions to positive psychology*. Oxford, UK: Oxford University Press.

Evans, J. H., Jr., & Burck, H. D. (1992). The effects of career education interventions on academic achievement: A meta-analysis. *Journal of Counseling and Development, 71*(1), 63–68.

Frankl, V. E. (1959/2006). *Man's search for meaning*. Boston: Beacon Books.

Fredrickson, B. L., & Losada, M. F. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist, 60*, 678–686. doi:10.1037/0003-066x.60.7.678.

Froh, J. J., Sefick, W. J., & Emmons, R. A. (2008). Counting blessings in early adolescents: An experimental study of gratitude and subjective well-being. *Journal of School Psychology, 46*, 213–233. doi:10.1016/j.jsp.2007.03.005.

Froh, J. J., Yurkewicz, C., & Kashdan, T. B. (2009). Gratitude and subjective well-being in early adolescence: Examining gender differences. *Journal of Adolescence, 32*, 633–650. doi:10.1016/j.adolescence.2008.06.006.

Froh, J. J., Bono, G., & Emmons, R. (2010). Being grateful is beyond good manners: Gratitude and motivation to contribute to society among early adolescents. *Motivation and Emotion, 34*, 144–157. doi:10.1007/s11031-010-9163-z.

Froh, J. J., Emmons, R. A., Card, N. A., Bono, G., & Wilson, J. A. (2011a). Gratitude and the reduced costs of materialism in adolescents. *Journal of Happiness Studies, 12*, 289–302. doi:10.1007/s10902-010-9195-9.

Froh, J. J., Fan, J., Emmons, R. A., Bono, G., Huebner, E. S., & Watkins, P. (2011b). Measuring gratitude in youth: Assessing the psychometric properties of adult gratitude scales in children and adolescents. *Psychological Assessment, 23*, 311–324. doi:10.1037/a0021590.

Gable, S. L., Reis, H. T., Impett, E. A., & Asher, E. R. (2004). What do you do when things go right? The intrapersonal and interpersonal benefits of sharing positive events. *Journal of Personality and Social Psychology, 87*, 228–245. doi:10.1037/0022-3514.87.2.228.

Gilman, R., Huebner, E. S., & Furlong, M. J. (Eds.). (2009). *Handbook of positive psychology in schools*. New York: Routledge.

Goleman, D. (1995). *Emotional intelligence*. New York: Basic Books.

Harter, S. (2006). The development of self-representations. In W. Damon (Ed.), *Handbook of child psychology* (5th ed., Vol. 3). New York: Wiley.

Kenny, M. E., Blustein, D. L., Haase, R. F., Jackson, J., & Perry, J. C. (2006). Setting the stage: Career development and the student engagement process. *Journal of Counseling Psychology, 53*, 272–279. doi:10.1037/0022-0167.53.2.272.

Lamborn, S. D., Brown, B. B., Mounts, N. S., & Steinberg, L. (1992). Putting school in perspective: The influence of family, peers, extracurricular participation, and part-time work on academic engagement. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 153–181). New York: Teachers College Press.

Lapan, R. T. (2004). *Career development across the K-16 years: Bridging the present to satisfying and successful futures*. Alexandria: American Counseling Association.

Lapan, R. T., Kardash, C. M., & Turner, S. (2002). Empowering students to become self-regulated learners. *Professional School Counseling, 5*(4), 257–265.

Lopes, P. N., Brackett, M. A., Nezlek, J. B., Schutz, A., Sellin, I., & Salovey, P. (2004a). Emotional intelligence and social interaction. *Personality and Social Psychology Bulletin, 30*, 1018–1034. doi:10.1177/0146167204264762.

Lopes, P. N., Salovey, P., Cote, S., & Beers, M. (2004b). Emotional regulation abilities and the quality of social interactions. *Emotion, 5*, 113–118.

Lopez, S. J., & Snyder, C. R. (Eds.). (2009). *Oxford handbook of positive psychology* (2nd ed.). Oxford, UK: Oxford University Press.

Perry, J. C. (2008). School engagement among urban youth of color: Criterion pattern effects of vocational exploration and racial identity. *Journal of Career Development, 34*, 397–422. doi:10.1177/0894845308316293.

Peterson, C. (2006). *A primer in positive psychology*. Oxford, UK: Oxford University Press.

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. Washington, DC: American Psychological Association.

Schmid, K. L., Kiely, M. K., Napolitano, C. M., & Lerner, R. M. (2010, March). *Choosing what to do: Using the 4-H study of positive youth development to study self-regulation in adolescence.* Paper presented at the biennial meeting of the Society for Research on Adolescence, Philadelphia.

Schmidt, J. A., Shernoff, D. J., & Csikszentmihalyi, M. (2007). Individual and situational factors related to the experience of flow in adolescence: A multilevel approach. In A. D. Ong & M. van Dulmen (Eds.), *The handbook of methods in positive psychology* (pp. 542–558). Oxford, UK: Oxford University Press.

Seligman, M. E. P. (1990). *Learned optimism: How to change your mind and your life*. New York: Pocket Books.

Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5–14.

Seligman, M. E. P., Ernst, R. M., Gillham, J., Reivich, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford Review of Education, 35*, 293–311. doi:10.1080/03054980902934563.

Snyder, C. R., & Lopez, S. J. (Eds.). (2002). *Handbook of positive psychology*. Oxford, UK: Oxford University Press.

Snyder, C. R., Lopez, S. J., & Pedrotti, T. (2011). *Positive psychology: The scientific and practical explorations of human strengths*. Thousand Oaks: Sage.

Wigfield, A., & Eccles, J. S. (2000). Expectancy–value theory of achievement motivation. *Contemporary Educational Psychology, 25*(1), 66–81.

Wilhelm, J. D. (2008). *"You gotta be the book": Teaching engaged and reflective reading with adolescents* (2nd ed.). New York: Teachers College Press.

Wood, A. M., Froh, J. J., & Geraghty, A. W. A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review, 30*, 890–905. doi:10.1016/j.cpr.2010.03.005.

Chapter 10
Models of Engaging Private Schools and the Case of Montessori Schools

Introduction

As we have seen thus far, flow is not "free-flowing" in US public high schools. While it is true that factors such as student instructional formats, school subjects, and teacher characteristics all influence student engagement, these influences are all rather temporary based on a given teacher, course, class, or even a specific instructional episode. One discouraging observation that educators repeatedly make is that students will respond only to external incentives. This phenomena tends to occur in environments in which the overall climate and culture of the institution is built on them. When students get programmed to respond only to rewards and punishments, the well-intended teacher's appeal to internal motives may naturally fall flat. No question about it: the broader the culture or ecological context for engagement, the better. A given class can build something like a "culture" of norms and expectations, but it is limited to the course of a semester and the confines of a single classroom. About the smallest institutional unit in which a culture is built and maintained is at the level of the whole school. Although individual teachers or even segments of faculty within a school may focus on given curricular or behavioral strategies that influence engagement, the essentials of the educational culture, including school spirit, school safety, and school climate, reside in the school as a whole. It is the whole-school culture that fosters students' development positively on a consistent and enduring basis. Thus, we should not be surprised that some of the more compelling models with an empirical basis for engaging students are schools taking wholesale approaches to building and sustaining climate and relational tone.

In this chapter, three private school models with empirical support for engaging youth will be presented and discussed: (1) Montessori schools, (2) Eagle Rock School in Estes Park, Colorado, and (3) the planned Arete School in San Rafael, California.

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Compelling Insights and Philosophy of Dr. Maria Montessori

Probably the single most important and significant model for engagement with a track record of actual practice (including the building of schools, curricula, and instructions) comes from the Montessori tradition. Maria Montessori envisioned a radically different approach to education from the factory model, one based on how children actually learn and develop rather than convenience and misconception (Lillard 2005). Montessori (1949/1988) said, "The teachers task is not to talk…" This single phrase might be repeated a billion times without being too repetitive in relation to its value today. She went on, "…but to prepare and arrange a series of motives for cultural activity in a special environment made for the child" (p. 7). Thus, Montessori believed that the teacher's job was first and foremost to provide motives, or motivate. And she believed the job of the child was to engage in activity of cultural import. This activity might be social in some cases and not in others, but it is *individual activity* that propels development, according to Montessori. Perhaps the single most important principle coming from Montessori is the sort of awe and reverence with which she spoke about the developing child:

> ….the child, instead of being a burden, shows himself to us as the greatest and most consoling of nature's wonders! We find ourselves confronted by a being no longer to be thought of as helpless, like a receptive void waiting to be filled with our wisdom; but one whose dignity increases in the measure to which we see in him the builder of our own minds; one guided by his inward teacher, who labours indefatigably in joy and happiness – following a precise timetable – at work of constructing that greatest marvel of the Universe, the human being. (Montessori 1949/1988, p. 8)
>
> We should help the child, therefore, no longer because we think of him as a creature, puny and weak, but because he is endowed with great creative energies, which are of their nature so fragile as to need a loving and intelligent defense. (Montessori 1949/1988, p. 26)

Before all other principles and beliefs that Montessori held, this was the most important, because it turned the tables on traditional education in terms of worthiness of respect and the center of dignity. Whereas traditional education is centralized and hierarchical in terms of the power structure, such that "mere children" are subservient to teachers, Montessori extolled, honored, and revered the child. This was undoubtedly "principle number one," to which all other principles were secondary.

Like Dewey, Montessori also sought to place children at the center of education. But she suggested, "it is not enough merely to know them, for if we stopped there we should remain exclusively in the field of psychology. We should never go further and become educators" (Montessori 1949/1988, p. 12). Principle number two was addressing the relative isolation of schooling. She stated simply, "All who enter the educational world tend to be cut off from society." Of course, Dewey had also identified this isolation as the source of all waste in education, but Montessori had concrete curricular and practical ideas to address it. She believed that if society deemed it necessary to make education compulsory, this should have two consequences: (1) schooling should have a practical aspect to better serve society, and (2) society

should understand the development of the child beginning at birth in order to be educative.

Principle three is extremely close to the view of the nature of learning as fundamentally episodic, as discussed in Chap. 8. Montessori (1949/1988) believed that the role of movement has always been neglected as part of school life and that its importance represented a distinctive perspective in educational theory. As a beginning observation, Montessori notes that the fundamental difference between living and nonliving things is movement. Furthermore, most animals express themselves through movement. Thus, the life force itself is inextricably bound up with movement.

Montessori believed that the purpose of movement is not merely as exercise for the body. Indeed, she did not perceive a division between mind and body. Rather, thoughts and actions are two aspects of the same occurrence; movement therefore serves the ends of existence, of the pursuit of material and spiritual life. A most important corollary for the educator is that *mental development is dependent on movement* (Montessori 1949/1988). In fact, observing a child makes it evident that the development of mind and spirit come about through movement. In the course of practicing skills and repetition of actions, all muscles and the nervous system act in unison as guided by the will (or motivation). This perspective comports with evolution, since humans evolved by moving and doing.

As demonstrated by Lillard (2005) and Rathunde (in press), this principle also has a good deal of research backing. One common theme across various perspectives from neuroscience, cognitive psychology, and philosophy is that the phenomenological experience of movement is powerfully connected to the capacity for abstract concepts (Damasio 1994; Gallagher 2005; Johnson 2007; Lakoff and Johnson 1999 as cited in Rathunde in press; Thompson 2007). For example, crawling has been related to a broad array of physical and cognitive advances, including the development of perceptions of distance, one's own body motion, the ability to follow a gaze, and representations of special layout such as finding hidden objects (Campos et al. 2000). Moreover, studies show that memory improves due to deeper encoding when people enact, or their movements otherwise align, with what is to be remembered (Engelkamp et al. 1994; Noice et al. 2000). Because movement and life are practically synonymous, immobility of life is *impossible*. One implication is that classroom life in traditional education sets up a fundamentally *untenable* situation, as work and play alike are inseparable from movement.

Clearly, the recommendation for practice is that movement is important to enhance learning. As usual, Dr. Montessori was never content to only have a useful idea; she also developed educational practices for them. In traditional classes, reading and writing often occurs via textbooks and recital while sitting at desks, apart from bodily movement. In contrast to these classes in which the body is merely a house for the mind, in Montessori classrooms, the body is an active entity that moves in concert with the mind. For example, children learn verbs by enacting those verbs; and by making and manipulating cubes rather than performing abstract cubing problems on a board. This sort of learning is consistent with Piaget's central claim that intelligence in infancy and early childhood is expressed through action

(Flavell 1963); children in the concrete operational stage, for example, could engage in logical reasoning and other mental operations so long as performing them *through* concrete, tangible objects. Many materials are designed specifically to introduce early mathematical concepts, and some studies have actually showed that high school students attending Montessori programs perform better on math and science tests than other children (Lillard 2005).

While traditional schools may incorporate "hands-on" manipulatives, these are essentially add-ons to an educational structure not taking into account the importance of movement for thinking and development. In fact, learning through movement and materials would be highly impractical and costly in the context of the factory model. Because children tend to do their lessons in unison in this model, learning through movement would require a set of materials for each student, which would be prohibitively expensive and impractical for storage. Thus, the model of education must be designed to allow for all children in the class *to perform many different activities with different materials at their own pace, all at the same time*. Few comparisons have ever been made between higher engagement in the Montessori model and in the after-school contexts; however, this basic design is in common, and equally critical to the heightened engagement in both.

The imperative for movement is incorporated into other aspects of a Montessori education as well. Dr. Montessori recommended that a baby's toys be kept a slight distance away at first in order to encourage movement. The use of strollers and other carriers is discouraged once a child is able to walk. All furniture in the classroom, including chairs, desks, sinks, and storage shelves, are the appropriate height for children so that they are not reliant on adults for physical tasks. Students in Montessori Toddler and Primary programs have Exercises of Practical Life to inspire activities such as washing floors, polishing wood, watering plants, or preparing snack. The purpose of such exercises is to inspire movement with a purpose, help children to carry out a series of steps in sequence, learn to care for the environment, and of course, practice concentration (the hallmark of Montessori education). Montessori called the peace children appeared to achieve through concentration to be "normalization," because children's troublesome behaviors often disappeared when they concentrated in meaningful activities, usually in interacting with materials.

When one moves with purpose, movement is aligned with thought, which guides action. One nods while thinking in the affirmative, and indeed, most people have greater difficulty nodding when responding negatively. As Piaget recognized, mental development in early childhood revolves around sensory, motor, and cognitive *coordination*. However, it is less recognized that engagement in learning domain-specific talents and skills also involves a high degree of spatial–temporal *coordination* involving movement in time. Most knowledge and skills are not employed in isolation. *Being skillful* in almost any domain (presumably an important goal of education) is a matter of learning to *dance* on an ever-changing landscape.

This leads to the an extension of the principle of movement in education: that higher degrees of intelligence are reached through the use of one's hands, as partially demonstrated by plentiful examples of mankind's increasingly complex

handiwork throughout human history. Because the production of works is achieved through the hands, the movement of the hands is intertwined with the development of character and personality of individuals, no less than civilizations.

A related Montessorian principle given short shrift in traditional education is that thought–action repertoires are unique to each child; each child has a distinctive style of writing, creating works, and other ways of doing things. Research also demonstrates that hand movements are intimately connected with learning and clearer thinking. For example, studies have demonstrated that the accuracy of spatial reasoning and problem solving is facilitated by hand gestures (Athavanker 1999; Schwartz and Black 1999 as cited in Rathunde in press).

Montessori's perspective is closely related to, but not identical with, the view advanced in this book of learning as fundamentally experiential or episodic in nature. The point here is not so much that bodily movement is important for development, which was Montessori's point. It is that learning is more deeply encoded when it is episodic, involving a beginning and end, movement, action, and rhythm because this is the form in which we make meanings from our experience. This is why, for example, humans have great difficulty memorizing an alphabet from memory alone, but it comes quite easily when matched to a song. In fact, countless mnemonic techniques, from the use of peg words, to songs, to visual imagery, are ways of making a body of information story-like, song-like, or otherwise episodic.

The distinction from Montessori's point about movement is illustrated by educational video games or virtual reality. From Montessori's perspective, this form of learning does not involve bodily movement any more than sleeping. But from our perspective, these experiences can be highly effective in the process of learning because they are episodic and faithfully simulate movement *as if* it is really occurring. Once initial sensorimotor coordination is obtained in early childhood, it is not the actual movement that is important, but the perception or signal of movement to the brain. It is the same reason that, in an otherwise tranquil room, our attention is drawn to a TV: It is the one window into a world of movement and fluidity in the room, a world to which our brains are naturally attracted.

Even though Montessori's educational philosophy mainly comports with Dewey's, and other developmental and constructivist thoughts, there is a practical reason that the Montessori model takes precedence. Unlike Dewey and others who preceded her, Montessori created the foundation for a specific curricular and instructional approach. Champion of an appropriately "prepared environment" for learning, it may be that Montessori's greatest contribution was working late into the night making new materials for teachers to try in the classroom. The materials were always field tested across age ranges until Montessori observed the type of reaction from children for which she aimed. And the reaction for which she aimed usually revolved around children's interest and concentration. If materials did not capture children's interest, they were often rejected. Moreover, Montessori placed primary emphasis on concentration. There can be little doubt that she regarded it as a sacred entity to be protected at all costs. In fact, despite the importance of physical activity, situated learning, and outdoor ventures in Montessori education, Dr. Montessori was not a big proponent of recess. She believed that any scheduled event, from

recess, to prescribed class periods, to extracurriculars, risked breaking children's concentration in activities of interest in which they explore their worlds and learn—a risk not worth taking.

Therefore, the basic Montessori method revolves around a prepared environment in which desired materials are carefully organized and thoughtfully arranged (Lillard 2005). Students are not assigned seats but are free to move about in order to engage with materials of choice throughout the course of the day, either alone or in groups. Lessons are provided as the individuals or groups are ready for them. Each material has a primary purpose for being in the classroom, and some have secondary purposes as well. The overarching curriculum is tightly structured, presented in a hierarchical sequence to introduce the relationship between materials and concepts in a thoughtful order. Frequently a series of prescribed steps is followed as a preparation for a main activity. For example, one activity involving the lifting of solid Wooden Cylinders involves practicing the thumb–index finger (pincer) grip needed for holding a pencil and writing. However, the exercise of lifting up cylinders that vary systematically in width and height, mixing them up, and returning them to their appropriate holes also helps to train the child's intelligence in terms of observing, comparing, reasoning, and deciding (Lillard). Like many of the Montessori activities, the exercise also helps to prepare children for math and increase powers of concentration.

Csikszentmihalyi (1990) observed that many flow activities have immediate performance feedback built into them. Montessori understood this principle implicitly and it influenced the materials she chose. In Montessori classrooms, pencils were considered preferable to marker precisely because they provided immediate feedback to child if they are pressed to paper too intensely (the led tip often breaks) or too softly (a mark will not be made). Special care is taken to make sure that neither reading nor writing becomes a long and laborious process, as children are believed to learn more if they *enjoy* reading or writing. Thus, enjoyment is also a sacred entity. Not surprisingly, students enjoy what they are interested in, and thus harboring *interests* is another primary goal of a Montessori education. Montessori classrooms are intentionally designed to be knowledge-building communities, much like scientific or research laboratories (Scardamalia and Bereiter 1994). Children choose what they want to learn based on interests, by lessons as well as exploration, and they teach each other by sharing the concepts and information they discover.

Montessori in Practice

In Montessori classrooms, children are thus more free to make many more choices than in traditional ones: what to work on, for how long, with whom, and so on. As Lillard (2005) says, "They arrive in the morning, look around the classrooms, and decide what to do" (p. 80). They work for as long as they are inspired and then put the work away and select something else, a cycle that continues all day. Teachers

guide children's choices, providing choices or structuring tasks as needed. This contrasts to traditional schooling in which teachers, administrators, and even legislatures choose what and when children study.

Research suggests that more freedom and choice within a carefully designed structure leads to better psychological and learning outcomes (Cordova and Lepper 1996; Nicholls 1984; Ryan et al. 1991). However, an overlooked benefit of choice in activities and tasks is its effect on the powers of concentration. Perhaps the most prized feature of the Montessori classroom is that children concentrate deeply and for long periods of time on their work. At first Dr. Montessori was surprised by the extent that this occurred, but then came to see it as an integral part of Montessori Education. Lillard (2005) notes that the level of concentration achieved in Montessori classrooms is reminiscent of Csikszentmihalyi's conception of flow. Often there is a hushed quality to classrooms as children are busy with their work, and educators notice episodes of concentration so intense that children appear to emerge from them with a satisfied air, as if taking a nap or having been in a trance. In one instance, a girl was concentrating so fully on the Wooden Cylinders that Dr. Montessori lifted the armchair she was working in, and the girl did not seem to notice, and continued to work with the cylinders on her lap repeating the activity many times. In fact, following about a 30-min warm-up period and brief break, Montessori observed what she believed were natural 1–2 h work cycles that could stretch into 3 h when extending into a new territory (Lillard 2005). She also believed that it was very important not to be interrupted during this period, as such disruptions deviated from normality of purpose and urge for completeness of action.

In addition to the influence of choice on concentration, Dr. Montessori also observed the importance of the reciprocal relationship: She saw concentration as crucial to children's ability to make choices. She actually saw these two coordinated powers as integral to developing positive personality characteristics or part of a larger positive "normalized" developmental process. Because this was all part of "normal" development, Montessori believed that all there was to do was set it free or not interfere with it. She believed this was a matter of common sense:

> All we have to do is set (the child's developmental) energy free. It is as simple as that. This is not giving freedom to children in the common sense…When we speak of freedom in education we mean freedom for the creative energy which is the urge of life towards the development of the individual. (Montessori 1989 as cited in Lillard 2005)

Csikszentmihalyi (1990, 1997) observed that individuals are in flow when working on tasks with a level of challenge on a step ahead of their present skill level, or the *zone of proximal development* in which Vygotsky believed learning to occur. Montessori believed that children instinctively seek tasks in this zone, that they prefer to engage in tasks just beyond their present skill level. This proposition is now referred to as the "moderate discrepancy hypothesis," which states that children attend to activities that are only of moderate discrepancy for their present capabilities. It is an interesting hypothesis because it suggests that children spontaneously serve to propel their own development. Montessori therefore believed that children

become normalized through making these choices that were needed for their own development.

A natural corollary to the importance of choice is that of interest: choosing works one is interested in doing. A great deal of research demonstrates that individuals learn and remember better materials with which they are interested, strongly suggesting that interest drives the acquisition of knowledge (Harackiewicz et al. 2002; Renninger 2000; Renninger et al. 1992; Sansone and Harackiewicz 1996). Montessori education is designed to awaken interest and stimulate learning in areas that personally interest students based on their previous experience. Dr. Montessori believed both in creating situational interest through the presentation of materials and in supporting individual interests observed. In terms of creating situational interest, Montessori teachers are trained to write down lessons as though a script, replete with illustrations, and to work on a captivating delivery style. They are also trained to study their own voice, movements, and appearance in order, and make an effort to be interesting to children. Often teachers present just enough materials to pique children's curiosity to learn more later.

With respect to individual interests, Montessori education encourages teachers to be careful observers of children's individual interests, noting whether or not the child is interested in a material or topic, in what way, and for how long. Teachers are thus students of their students' interests. Based on their observation, they then encourage students to pursue issues that fascinate them. Often students can learn much in a great variety of topics through interest in a single topic. Rather than being asked to memorize a large volume of information related to a single topic, children in Montessori schools may be asked to write and present a report on something that fascinates them. There is a curricular core each child is exposed to, but then children may invest their imaginations in interesting avenues for exploration. Montessori education also seeks to capitalize on heightened interest in some activities at particular times in development, such as the intense interest in learning language during the preschool years.

As suggested earlier, the crux of the problem in applying the principle of individual interest in traditional education is teachers feel they would never have enough time and resources to individualize education according to individual students' interests and needs (i.e., "Horace's dilemma" (Sizer 1984)). However, this predicament appears to be created in large part by the factory model itself. When children are ushered through the same system in lockstep, it becomes prohibitively challenging for personal interests to drive learning, for it would take the class in too many directions. A strict, train-like schedule also prohibits it, because individual interests would become constantly disrupted in order to stick to the schedule. In this system, children learn mainly how to follow someone else's schedule rather than how to create their own schedule and make decisions based on perceived importance and interest. In Montessori Education, however, students do learn how to schedule their own time. For in the system developed, the prescribed curriculum (e.g., trinomial formulas) is not something teachers need to spend all of their time creating, practicing, and delivering. Rather, the lessons are inherent in the materials. The teacher's

role, therefore, is to focus on the needs and interests of the individual children, and to be generalists rather than experts in a given curricular area.

A great deal has been written on extrinsic incentives and their undermining effects on motivation and continued learning, especially when those incentives are removed (Sansone and Harackiewicz 2000). A good deal of research suggests that sustained intrinsic interest is not supported by external rewards or incentives (Deci et al. 1999). Before most of this research, however, this was proven to Dr. Montessori though experience, when she attempted to motivate students to read challenging words with the use of rewards, but the children turned out to be more interested in reading more words than the rewards. Moreover, Montessori was concerned about the tendency of inducements or punishments to disrupt concentration, the entity to be protected above all others. Sustained, intense periods of concentration are absolutely central to Montessori education. Montessori observed that children can maintain intense concentration for longer than most might expect—30 min at a time at the primary level; and a full day, or several days in succession, on a single project by the elementary level.

Furthermore, because children work on what is interesting rather than what will bring them A's on a report card, the problem of working only on what they are good at, or what comes easily, is reduced. Montessori children are more likely to adopt mastery goals, whereas traditional education breeds mainly performance goals despite the quickly accumulating research on the benefits of mastery goals as discussed in Chap. 3. The potential for surveillance or external evaluation to undermine intrinsic motivation is carefully balanced in Montessori education against the need for the instructor to collect, observe, and analyze information regarding children's progress. In Montessori education, teachers gather such information through observation, products of children's work, and reviewing children's Work Journals (Lillard 2005). Teachers are careful that their observations are not perceived as surveillance to the extent that self-consciousness interferes with concentration. They are also keenly aware of the potentially distracting influence of undue or excessive praise or criticism. Rather, materials are devised to be both self-correcting and self-rewarding.

While we will not go into details about the principle of learning in context, it is significant not only because children learn by doing rather by what they are told from a teacher, but also because they go out into the real world to further explore or research their interests. An integral part of Montessori education involves exploration outside of the classroom. For example, trees, birds, or flowers learned in the classroom become an objective for examination on a routine walk or field trip. It is common for children who have become interested in a topic, say trains, to explore those topics in the community and bring artifacts back into the classroom for classification and further study. The student might interview an expert or visit a museum to write a report to share with the class. This approach, sometimes referred to as situated cognition (e.g., Brown et al. 1989), has received a great deal of interest and empirical support in recent years. Note that this component of a Montessori education is not an add-on, as with after-school programs in the public school system; rather it is fully integral to the educational model. It would be common for a given

class to leave the classroom twice a month, for a half day or whole day, on such a "Going Out" trip.

Montessori in Adolescence: The Emergence of Montessori Middle and High Schools

Dr. Montessori also had distinctive observations and beliefs about the nature of adolescent development. She believed that puberty marked the end of childhood and a time of change so extraordinary it might be called a rebirth (Montessori 1936/2001). In particular, she believed the child becomes a "newborn" social being. She stated, "Nature prepares the second birth: Social Man develops….He feels a mysterious social feeling, and he is interested in the ideas of other people" (Montessori 1937/2001, p. 195).

Similar to the whole being upon birth, this new social being is also weak and dependent on support and guidance. The goal of the secondary school, therefore, becomes the preparation of finding one's place in the social world, and just as independence is the goal of a primary education, social independence becomes the goal of a secondary education. According to Dr. Montessori, this was symbolized by the sentiment in adolescence, "I no longer belong to the family as the child. I have something else to do" (Montessori 1936/2001, p. 179). However, the adolescent absorbs social competencies and awareness quickly at this stage. She observed, "… we see that he has a sensitive period to go through which has the same relation to social life as the previous sensitive periods have to individual life" (p. 181).

At this stage, the adolescent comes to understand the manners and rules that govern social relations, and the need for laws to regulate work, commerce, and industry. Dr. Montessori believed that it was essential for the adolescent to live out the need for these rules and laws through working, producing, buying, selling, managing his or her own money, and other activities in which the need for rules and laws would become clear. However, she was clear that the adolescent should not work *as adults work*. Rather, society must create educative opportunities and possibilities for this work. The adolescent is still to be compared to the child as a social being, she believed, and thus still in need of schooling.

Instruction would be needed for the adolescent to practice her intelligence at all levels, but instruction through force or "cold transmission," Montessori believed, would lead to distaste and horror for studying, and indeed, even the impossibility of it due to mental barriers. Thus, she believed that the needed education does not consist of lectures, which makes the individual tired, but rather social experiences: social life based on instruction. Importantly, she believed the adolescent must work with his mind and his hands, for the path to optimal growth integrates physical and mental/spiritual energy. Echoing Einstein's aim of education as the training of independently acting and thinking individuals, Dr. Montessori stated, "It is essential for the child, in all periods of life, to have the possibilities of activities carried out by

himself in order to preserve the equilibrium between acting and thinking" (Montessori 1973, pp. 24–25). The goal of the education becomes the goal of navigating life: that of overcoming obstacles, and of feeling oneself "capable of succeeding in life by his own merits and on his own merits" (Montessori 1973, p. 103). How do we provide these sorts of social experiences that exercise both the mind and hands? Dr. Montessori was not against adolescents making money, but did not believe this was the only goal. The important point was for adolescents to have social experiences that put them in contact with the functioning of society.

She also rather pointedly claimed that the present state of education for adolescents is misguided: "Society spends an awful lot on the education of people who produce nothing and whom it destroys." She likened the typical schoolchild to a passive prisoner who is provided with more or less comforts at the discretion of elders. At the same discretion, the little prisoners are sometimes told that they can move about, or that they can use their hands. She stated that even when this happens, it is not the case that anything is being done for the children, because it is still the teachers who make the decisions, and therefore who do or do not do everything. However, she believed if all adolescents worked with their minds and their hands in the context of social and economic life, they will come into a stronger and more harmonious society all the better prepared for it (Montessori 1938/2001).

The first attempt to establish a Montessori secondary school in Amsterdam in 1927 failed, but following this and 3 years of preparation, a group of parents succeeded around 1930–1931 in setting up the educational continuation of their children who had attended Montessori elementary schools in Holland. These were called Montessori Lycia (Stephenson and Joosten 1976/2001). However, even Dr. Montessori was not ready for the schools to be called "Montessori," because she recognized that there was no Montessori method yet developed for secondary schools. Even more importantly, she believed that for a secondary school to be truly "Montessori," the continuation of the method could only "come from the children." This meant that it must evolve organically, generated by observing adolescents functioning in a new prepared environment, and testing out techniques and materials with them (Gang 2001).

As the most ideal prepared environment for the adolescent stage, Montessori literature evokes images of a residential farm school—what is calls an Erdkinder concept. Erdkinder means literally, "children of the earth," and in an Erdkinder program, children live on a farm where their "schooling" consists of running the farm as a business, including caring for the animals and tending the crops, guided by instruction. It was clear that Montessori envisioned more than a farm as the idealized environment. It would be a combination of a farm, a hostel, a market, and workshops containing many machines. This would form a community where youth, and their teachers and advisors, would live together. The young people would need to learn to do both manual skills and mental work in order to run the operations of the community. They would learn the economic realities of livelihood and experience social stress. As a home away from home, it was to provide an atmosphere of love, partly because teenagers are both tender and vulnerable, and partly because they are preoccupied with interpersonal relationships. The farm school was intended

to extol the birth of civilization, bringing life and relevance to the agricultural revolution. Most importantly, Montessori was hoping for a philosophical and reflective dimension regarding the relationship between human life and nature, and how civilizations transmit their knowledge through the generations (Kahn 2001b). The "experiment," as it was sometimes called, was partially to see if adolescents in this environment could take part in the "Great Conversation," dealing with the questions of nature and the existence of God, the destiny of man, the purpose of human society, and the purpose of one's self. It was believed that the Great Conversation could not come about through reading, writing, and discussion alone, but through real-life experience and social situations.

While there are only a few secondary schools that attempt the "Erdkinder experiment" in pure form, such as the Hershey Montessori School in Ohio (see Kahn 2001a), the vast majority of existing Montessori secondary schools in the United States, the Netherlands, and Germany are not Erdkinder schools, but are pioneering advances towards the achievement of such schools. Most of the existing secondary schools are considered to be a Montessori Erdkinder compromise, or "urban school." These schools provide a Montessori environment for youth between the ages of 12 and 18 in or close to a city where Montessori elementary programs exist (Gang 2001). In fact, there is no one Montessori method of teaching in middle and secondary schools. Dr. Montessori (1973) made public only her ideas about the needs and ideal raising of adolescents as a foundation as delineated above, but not a detailed method as she had for elementary programs.

What principles, then, are applied to typical (compromise) Montessori middle and high schools that makes them "Montessori"? It is obvious that the methods used at the elementary level could not be simply transplanted to secondary schools due to the age difference of the population. Jordan (2001) outlined some of these compromise principles, including those he adopted for the Utrecht High School that he founded in Holland in 1945. First is a break with the classical system of teaching, which is too narrow for an individualized approach to the child or adolescent that Montessori encourages. It must be reasonably flexible within reasonable limits so that students are free to choose activities according to their interests and engage with them at their own tempo. It must include the living and/or working together with fellow pupils in mixed groups where mutual collaboration, readiness to help, and team spirit are fostered. It should allow for students to take the initiative to make contact with community members regarding work on topics of interest. Just as in elementary schools, it should strive for an appropriate degree of freedom and gaining of independence that fosters self-control and self-regulation.

Overall, the formation of harmonious personality is a central theme, very much as Einstein suggested should be the primary goal of education (see Chap. 2). Rather than prioritizing the cramming of facts into students' heads, the school should emphasize the insights that can be gained through educative experiences. Ethical values in particular (for which adolescence may certainly be considered a sensitive period), if they are to be worth anything at all (i.e., adopted, internalized, and practiced), must be personally discovered and experienced. In a way, then, even the so-called *compromise* high schools would strive towards the Erdkinder ideal of helping

to build a reflective and global view of life. Just as with Erdkinder, it is believed that knowledge alone is not sufficient, or at least not as important as feeling and intuition as primary components of our personality.

Where such results exist, most show that the outcomes of final exams and other practical markers of academic achievement in compromise schools like Jordan's high school are at least equal to those achieved in other schools (Jordan 2001). More significantly, based on conversations with employers and community members, Montessori educators come to believe that many of their students stand out due to their special qualities. Perhaps the most convincing evidence of the quality of the education is Montessori students' own testimonies. Many believe that they struggle less than their peers at other schools, they are grateful for the independence and freedom that they are provided at their school, they are happy that they learned to cooperate and get along well with others, and they feel fortunate to have taken more responsibility and for being intuitive in their work. One repeated theme is a sense of real team spirit (Jordan 2001).

Studies of Engagement in Montessori Middle Schools

Rathunde and Csikszentmihalyi (Rathunde 2003; Rathunde and Csikszentmihalyi 2005a, b) conducted a study comparing student engagement and the quality of experience of 150 students in five Montessori middle schools to a comparison group of demographically matched public middle school students from the Sloan Study of Youth and Social Development (SSYSD; See Csikszentmihalyi and Schneider 2000). Based on observations and teacher interviews, Rathunde (2003) selected the five Montessori middle schools that significantly diverged from traditional practice based on the Carnegie Foundation's (Development 1989) Turning Point Criteria using the acronym, TARGET (Task, Authority, Recognition, Grouping, Evaluation, and Time). For example, the schools emphasized a *task focus* that valued intrinsic motivation, giving students ample freedom to choose and carry out tasks. *Authority* was not rigidly hierarchical, but plans were often based on significant student input, sometimes from student "leadership groups." Students were *recognized* through researching and presenting topics of interest, not through achievement competition. *Grouping* was based on interest rather than ability, and emphasized cooperation and collaboration. Grading was not mandatory and testing was not used for comparison and placement purposes; many alternative forms of *evaluation* were used. *Time* was managed flexibly rather than in typical block periods, with teachers allowed to expand or contract meeting time, including an average of 2 h of unstructured, self-directed time per day. Rathunde also noted that the schools were very aligned with the belief in a united mind and body by the integration of acting and thinking in activities, and was struck by the balance between freedom and discipline, or the allowance of freedom with limit setting.

The traditional comparison group consisted of approximately 160 students from a selected subsample of the larger SSYSD study (discussed in Chap. 6) matching six

public middle schools to the Montessori subsample based on parental education as a proxy for socioeconomic status, ethnic composition, and student–teacher ratios. There were no statistical differences between the comparison groups on a variety of individual, family, school, and community variables after the matching. Using the ESM, participants in both subsamples reported their subjective experiences when signaled at random times by pre-programmed wristwatches throughout the day. The researchers were particularly interested in a measure of *undivided interest* (Rathunde 1993, 1996) in which intrinsic motivation (i.e., enjoyment and interest) and perceived salience of activities/materials (i.e., importance) were simultaneously high. Oppositely, *disinterest* was detected when both intrinsic motivation and salience were low. They were also interested in two forms of *divided interest*: "fooling" (i.e., high intrinsic motivation but low salience) and "drudgery" (high salience, but low intrinsic motivation) (Rathunde 2003).

Results revealed that Montessori students had more positive perceptions of their teachers and schools compared to the traditional students, including higher affect (i.e., feeling happy, relaxed, sociable, and proud), potency (feeling strong, active, and excited), and motivation (i.e., perceptions of enjoyment, interest, and intrinsic desire to do the activity) (Rathunde 2003). The only experiential dimension which was higher among the traditional group was salience, or perception of importance (Rathunde and Csikszentmihalyi 2005a). Perhaps, most interestingly, the Montessori subgroup reported a significantly higher percentage of their academic experiences—40 % compared to 24 %—that were classified as undivided interest (high intrinsic motivation, high salience). The combination is thought to characterize an efficient use of attention consistent with flow experiences, or what Dewey (1910/1997) referred to as "being playful and serious at the same time" (as cited in Rathunde and Csikszentmihalyi 2005a). In sharp contrast, the most common type of experience reported by the traditional subgroup was drudgery (high salience, low intrinsic motivation). In fact, traditional students reported drudgery 44 % of the time compared to 26 % of the time among the Montessori group. This was interpreted to be the experiential consequence and confirmation of traditional school's focus on achievement and performance goals in ways that undermine intrinsic motivation (Rathunde 2003). Indeed, the Montessori subsample spent a significantly higher percentage of time in flow (i.e., simultaneously above average challenge and skill) during academic work (Rathunde and Csikszentmihalyi 2005a).

Montessori students also rated their perceptions of support from their teacher, classroom order, and feeling safe significantly higher than their counterparts attending traditional schools (Rathunde and Csikszentmihalyi 2005b). The most profound and striking differences related to perceptions of friendships at school and how they characterized their classmates. For the vast majority of time Montessori students were in school (71 %), they characterized their social environment as being among friends and classmates, whereas students in traditional schools perceived themselves to be among classmates, but not friends, most of the time (59 %). In contrast, students in traditional schools believed they were among friends and classmates only 32 % of the time, and Montessori students characterized their social

environment as classmates but not friends only 19 % of the time (Rathunde and Csikszentmihalyi 2005b).

Similarly, striking differences were found in time use and the instructional formats used (Rathunde and Csikszentmihalyi 2005b). Overall, Montessori students reported spending a higher percentage of time at school doing academic work, extracurricular activities, and chores compared to students attending traditional schools, who, in turn, spent a higher percentage of time socializing, in leisure or games, and watching media than their Montessori counterparts (Rathunde and Csikszentmihalyi 2005b). For students of traditional schools, the majority of activities during instructional time were characterized by students as either "passive listening" (40 %) or watching media (20 %); these activities comprised a minority of the activities reported by Montessori students (24 % and 6 %, respectively). A majority of activities reported by Montessori students were classified as individual work (38 %) or group work (32 %), activities reported as the most engaging activity types in previous ESM research (Shernoff et al. 2003), but students from traditional schools reported these activity types a smaller percentage of the time (26 % and 13 %, respectively).

In a more recent ESM study, Rathunde (in press) assessed whether the Montessori practice of 30-min morning nature walks would have a positive effect on students' attention and concentration during subsequent academic work. Approximately 172 young adolescents participated in the study. Short-term effects of the walk were captured by a questionnaire completed immediately after the walks; and the ESM captured the lingering effects of the walk (approximately 2,500 signals across 4 days). The study found that students who felt fascinated while taking the walks were less distractible and mentally fatigued *immediately* after the nature walks, and the same students showed improved concentration lasting approximately 4 h into the school day after the walk.

In sum, these studies suggest that students in Montessori middle schools adhering to principles of Montessori education are significantly more engaged during academic work and instructional time than those attending traditional middle schools. It suggests that this effect is facilitated by a learning environment creating a higher quality of experience from the students' perspective: more supportive teachers, a stronger propensity to view their classmates and staff as friends, perceptions of greater order and safety, more productive and efficient use of time, and more engaging instructional formats.

One implication of these findings is that traditional schools may sorely undervalue or underestimate the role of supportive teachers and peer relations, engaged learning, nature, and aesthetics in their emphasizing of standards-based testing and grading, a top-down hierarchical structure, ability grouping, and narrow curricula. Such an educational approach may result in exercising a thin set of cognitive skills to the neglect of nurturing affective and physical dimensions of educational experience integral to the development of the whole person. Experientially, this may result in students' focus on performance goals rather than mastery goals and more satisfying intrinsic and collaborative motives. Indeed, the intentional strategy of integrating the development of mind and body, acting and thinking, resulted in the superior

capacity for *meaningful engagement* characterized by both academic salience and an optimal emotional response. In addition, an appreciation for nature and the aesthetic qualities of the environment had a positive effect on students' propensity to experience fascination as well as on their academic concentration. Most importantly, it should not be of great surprise that an educational environment designed to intentionally build a culture of flow, intrinsic motivation, and engaged learning experiences does indeed result in greater flow, intrinsic motivation, and engaged learning experiences.

Eagle Rock School in Estes Park, Colorado

Located in the Colorado mountain community of Estes Park, Eagle Rock School (see www.eaglerockschool.org) consists of both a small residential school and Professional Development Center (PDC). It is the initiative and vision of the American Honda Education Corporation, a nonprofit subsidiary of the American Honda Motor Company, in order to further the company's long-term commitment of contributing to society. Eagle Rock School is a small, nongraded, interdisciplinary, high school enrolling up to 96 students who have struggled with schooling. It provides a full scholarship for high school students and a low-cost professional development center for staff. The PDC provides internships, fellowships, preservice, continuing education experiences, and consulting services; conducts research, provides workshops, and makes presentations; offers teacher training and certification; and hosts visits with educators on issues of school renewal and reinvention to engage rather than merely retain and graduate students (Easton et al. 2014).

Eagle Rock School intentionally enrolls a small population of students having two things in common: They have not found success in traditional schools and academic programs, but they passionately welcome change—in themselves and their environment. Some were "good students" at a previous point in their education, but the path to success proved elusive for all. Most have trouble-ridden family and personal backgrounds including the serious illness or death of family or friends, experience with or exposure to drug or alcohol addiction, separated or divorced parents, exposure to violence or domestic abuse. Many have attended and failed out of numerous schools, with some diagnosed with learning disabilities. Whether their "problem" with school was cognitive or interpersonal was of little consequence or consolation; most students share a troubled past, and were made to feel responsible in one way or another for their inability to learn and school failure. When they arrive at Eagle Rock, most have low self-esteem, feeling that they are stupid or ugly. And because learning was something teachers "put into them," when it didn't happen, that was proof that something was wrong with them. But as they attend Eagle Rock, their beliefs about learning and school success begins to shift. Gradually they realize that they "teach themselves," and therefore a responsible agent for learning rather than the defective receptacle (Easton 2008).

How does this happen? The core belief of Eagle Rock is that their students can begin to change their lives and experience success only if the entire culture of schooling is reinvented. The school focuses on creating a program and curriculum—indeed, a whole-school culture—that invites students to learn through a nurturing and educationally rich environment. Keys to that environment are an authentic community in which the students are useful and valued participants, a guiding set of principles (i.e., themes, expectations, and commitments) for community participation, and challenging experiences both in the classroom and on wilderness trips. Because there are high expectations for reaching personal and academic standards, students are expected to grow both personally and academically, documenting their proficiency and mastery in selected areas.

At Eagle Rock, students are engaged in active, interactive, interdisciplinary, and project-based experiential learning oriented towards application in the real world. There is no grading used for courses or assignments, nor is there ability or age-based groupings; consequently, there is no failure. Rather, learning occurs in a variety of modes, times and spaces, and performance assessments that simultaneously evaluate and enhance learning are used. As one of many examples, students participate in the activities of the Professional Development Center, assisting staff to make presentations at conferences, serving on design teams and conversion plans for new programs, and engaging visitors in conversations at meals. They understand that they are a full participant in Eagle Rock's mission, which includes research and professional development related to the school's vision.

Eagle Rock School is centered around engagement. While acknowledging that we want students to be interested and intrinsically motivated, Easton observes that what educators really want to see is most like Csikszentmihalyi's (1990) concept of flow: "If only our students could be as intent about learning as tennis players are on serving or artists on painting a picture! How wonderful if they could be fierce with concentration, so absorbed they lose self-consciousness, and so focused that space and time disappear" (Easton 2008, p. xix). Thus, balancing challenge with students' skill level is integral to Eagle Rock's philosophy. Much like the recent motion picture, *Dolphin Tale*, which tells the story of a boy who is thoroughly disengaged at school, but develops a deep caring and passion for learning about sea animals through his encounters with a beached dolphin, the most powerful learning experiences unleash the individual students' creativity and interests in activities based on the world around them. Eagle Rock's mission is therefore built on two tenets: (1) students learn when they are engaged, and (2) schools have the power to engage students through its curriculum, instruction, assessment, and most of all, its culture (Easton 2008).

Eagle Rock understands that school culture affects every aspect of the students' life at school. Created by both staff and students, it also affects adults. Some of the themes emphasized as being a part of Eagle Rock culture include (a) a learning (rather than a testing) environment, (b) nurturing relationships, (c) principles (not rules), and (d) democratic life. In terms of nurturing a culture of learning, everyone at Eagle Rock understands that not only do some students perform poorly on tests despite understanding the material, but tests lead to the type of labeling and special

placements that are harmful to self-esteem. Much of the population has experienced aversive if not traumatic experiences with testing, often compelling students to choose to miss school. Students at Eagle Rock testify to the negative consequences of testing on their confidence, self-esteem, and self-worth; their authentic interests; sense of school fairness; feelings about teachers, parents, and others who take testing seriously; perseverance; and desire to succeed in school. Converting to an orientation of learning rather than testing at Eagle Rock means realizing that learning a great deal at school is ultimately what counts both now and for college, making tests of secondary concern. It means not fearing or being overwhelmed by tests, and even coming to welcome challenge due to the confidence that develops from a focus on learning. It means building on one's passions and interests; doing and experiencing rather being passive and only listening; practicing and extending what is learned; teaching others; solving problems and grappling with ideas; applying what is learned, including to oneself; reflecting and having fun; being a part of a continuous and connected learning process; and learning according to one's own styles and preferences (Easton et al. 2014).

Struggling students consistently cite the quality of relationships as the key difference in schools that work for them and those that do not (Easton et al. 2014). What, then, characterizes relationships in schools that work? Trust and support are repeated by students most commonly; most importantly, when teachers reach out to students on an individual level, it shows students that they care about them as persons. It is also very important to adolescents that their relationships with adults are based on mutual respect and responsibility towards one another rather than power, authority, or hierarchy. Many adolescents who come to Eagle Rock have developed a sense of distrust towards authority. Adult exhortations such as "What's the matter with you?" "Stop yelling!" and "Grow up!" are dismissive of adolescent perspectives and experiences, and convey that something is wrong with the person rather than an understanding of the underlying causes. The response is often a wholesale rejection of authority and authoritarian values. Eagle Rock attempts to put relationships first and model good relationship building, among staff as well as between staff and students. Of course, if a teacher knows or sees a student only as a student, it is hard to understand their needs, struggles, and interests as a whole person. Certainly, in public schools, it is difficult to have a deeper relationship with a teacher when students know that the teacher's primary job is to evaluate them.

The culture of Eagle Rock is based on principles rather than rules. The reasons for this are important. Rules imply a hierarchical or authoritarian power structure, with those in charge making the rules and those breaking the rules deserving punishment. Rules seldom address the root causes of a problem and the social complexities involved. Perhaps most importantly for community building, rules imply that people won't do the right thing by their own accord. However, if actions and behaviors are not governed by deep integrity and character strengths, the human relationships involved will likely deteriorate. Principles at Eagle Rock revolve around the model: "8 (themes) +5 (expectations) =10 (commandments)". The eight themes include intellectual discipline, physical fitness, spiritual development,

aesthetic appreciation, service to others, cross-cultural understanding, democratic governance, and environmental stewardship. The five expectations will be discussed below in the context of the Eagle Rock curriculum. The ten "commandments" are to (1) live in respectful harmony with others; (2) develop mind, body, and spirit; (3) learn to communicate; (4) serve the community; (5) become a steward of the planet; (6) make healthy personal choices; (7) find and develop the artist within; (8) increase leadership; (9) practice citizenship; and (10) devise a moral and ethical code.

The struggling students who enter Eagle rock are resistant to rules, but enjoy engaging in discussions about principles such as these. Therefore, all new students at Eagle Rock take an introductory course to learn and discuss principles that govern the community. Entering students also take a wilderness trip for orientation and bonding, and upon returning from the trip transition to school life through a course offering discussion about community choices. Five basic rules to ensure safety in residential life are also discussed: (a) no drugs, (b) no smoking, (c) no alcohol, (d) no sex, and (e) no violence in any form. Otherwise, with these straightforward exceptions, the community is completely principle-centered. Just as students learn that they are responsible for their own learning, in a principle-centered community, they learn that they are responsible for their own behavior.

Because Eagle Rock is not hierarchical in its power structure, it is important that it be effective as a democratic community. While many citizens have a state standard in civics to learn the roles, rights, and responsibilities of an effective citizen, at Eagle Rock they live it. They not only study democracy; they practice voice, choice, and accountability. They have a say in community matters that are important to them. The more choices they make, the more they have to think about their actions and their consequences. Students have a lot of choices at Eagle Rock, including choice of courses, and projects to pursue academically, the method by which they will learn (e.g., reading, interviewing, researching, etc.), where to work, how to document their learning, with whom they will work, how to share their work, if they need help, and how to get it, and how to use their time more generally. In time, students find choice essential to directing their own life and becoming responsible for it.

The culture of Eagle Rock is also created through the curriculum (including assessment), as well as the community. With respect to curriculum, graduation is not based on time or credits. Students do not move from one grade to another, because there are no grade levels. Proficiency is expected of every student; but this is not represented by credit hours in the traditional subjects. Rather the "five expectations" are the important outcomes with curricular implications: (1) expanding one's knowledge base, (2) effective communication, (3) creating and making healthy life choices, (4) engaging as a global citizen, and (5) practicing leadership for justice. These expectations help students to understand the purpose of their courses and subordinate curricular goals. In fact, students enroll in the courses they need to in order to meet the five expectations. To help them make healthy life choices, for example, they might take a biology course with a twist called "Blood and Guts" or a highly experiential science course called "Brain, Balance, and Body." Or they might work on Kitchen Patrol to learn about sustainable agriculture. One

student customized many of his learning experiences around his interest in Hispanic culture. He might have worked on the expectation to make healthy life choices by studying the nutritional value of Mexican-American cuisine (Easton et al. 2014).

Some students might learn through an experience, followed by a reflection and application. Others might conduct research and make an oral or written report. Some students might work in groups, and some might work individually. Some might create a play, a story, or a demonstration. Students have the opportunity to get involved in service projects, such as coaching or taking a leadership role at an elementary school. Many students at Eagle Rock do not see the point in taking a single course for an extended period, such as chemistry for a year, and so enjoy being able to customize their learning and make their own learning choices. Obviously, then, Eagle Rock does not attempt to "cover" a given curriculum; rather, it takes a "less is more" approach (Easton et al. 2014).

With respect to assessment, students document their learning in a variety of ways, sometimes in combination: portfolios, essays, reports, interviews, demonstrations, creative work, tests, observation results, etc. Rubrics help students and staff to understand what mastery means and what is mastered. Because there is no failure, students demonstration of learning only serves to show if mastery was obtained *yet*—or if more work will be needed. At the end of ten weeks, all students make a presentation of learning (POL) to a panel of outsiders in order to demonstrate their progress towards one or more of the expectations. POLs encourage students to reflect, synthesize, evaluate, and analyze new knowledge. Students have 15 min to present, and 15 min to respond to questions from the panel. When they graduate, students report on how they have met all of the graduation requirements in a POL limited to 1 h (Easton et al. 2014).

A couple of structural features of the community are intentionally designed. These include the small size, so students can easily find their place within the community, and there is accountability among the members (e.g., it is hard to hide in a small school). The community is also intentionally structured to include gatherings and regular times for the whole school to convene and discuss community life. Expertise is intentionally distributed such that there are no definitive content experts, but rather an ethos of teachers and students learning together is created. Staff are flexible, persistent, and patient until students reach a desired level of mastery. Verbal exchange in classrooms is not reduced to superficial question and answers but more deeply engaged discussions prevail in which students' ideas are taken up to move the class forward (Gamoran and Nystrand 1992). Also intentionally scheduled are many community events, Community Gatherings and Community Meetings, advisories for feedback, POLs, and Eagle Rock Excellence Awards ceremonies. Graduating students have attested that forming an authentic school learning community allows the members to encourage each other to go beyond the normal limits of their education (Easton et al. 2014).

For Eagle Rock, the primary marker of success is the thriving of students who were once completely lost in the public education system. Not all students who enter Eagle Rock graduate from it, but about 90 % of Eagle Rock students do graduate from high school—a goal that, for many, is unthinkable before the Eagle Rock

experience. Though Eagle Rock does not emphasize tests, students do take a norm referenced test upon entrance and graduation, with test scores invariably indicating significant improvement in academic competencies. Over the past 18 years, many Eagle Rock graduates have gone on to obtain college and graduate degrees; get married and have families; and serve in the military. They typically obtain employment and pursue careers. As with most high schools, some may continue to struggle with problems that plagued their life before entrance to Eagle Rock.

American Sports Institute's PASS Program and Planned Arete School

Another noteworthy model and exciting vision for an engaging private school education comes from the American Sports Institute in Marin County, California (or ASI; see www.amersports.org). ASI is a nonprofit organization that uses "positive aspects of sport culture" to address personal, social, and international concerns, especially problems in the public schools. ASI takes as a starting point statistics suggesting that shortcomings in academics, health, and fitness among children and adolescents have developed into a modern day crisis. A multitude of warning signs include less than 45% proficiency rates in science, social studies, math, and English according to CA STAR test results; a significant ethnic graduation gap in California; increasing apathy, boredom, and lack of motivation for academics as students move through the school system; growing, epidemic proportions of childhood overweight and obesity, predisposing millions to diabetes, heart disease, and cancer, especially for students from disadvantaged backgrounds; and less than 25 % of fifth to ninth grade students meeting minimal fitness standards. ASI founder, Joel Kirsch, asserts that the inescapable conclusion is that *there is something fundamentally wrong with the core of the nation's educational system*. For Kirsch and ASI, the question goes back to: Why do so many students love sports but dread school?

Certainly, those who cherish athletic experience know that there is something special about it. ASI's vision for a private school model described below evolved from an innovative program it developed in the public schools based on a model of sports participation called the PASS program (Promoting Achievement in School through Sport). Implemented in 28 middle and high schools primarily in California and Illinois, PASS is a daily, yearlong academic course in which middle and high school students learn how to improve their grades, behavior, self-esteem, and physical performance. In the course, students develop a set of individualized academic and physical goals, and then apply positive aspects of sports culture to achieve them. The positive aspects of sports culture include: (a) self-paced learning (just like athletes, being allowed to developing skills at one's own pace), (b) mastery-based learning (putting forth one's best effort to reach learning and other goals, and moving on to the next level or goal only after mastering the present skill), (c) relevance (knowing the reasons for working on a topic, and developing an intrinsic

interest in it), (d) active engagement (as with sports, except applied to learning process), (e) coaching methodology (all instructors will be called "coaches," whose role is to demonstrate, monitor while students practice, and provide feedback in a self-paced learning environment), (f) performance learning (in which students must frequently demonstrate their skills in a variety of ways to a variety of audiences), (g) team-oriented learning (contributing the success of one's group as well as one's individual success, and thus being responsible for peer's performance as well as one's own), (h) character development (including *Fundamentals of Athletic Mastery* such as concentration, balance, relaxation, power, and rhythm), and (i) project-based, team learning (completing comprehensive projects in teams relying on interdisciplinary fields of study).

An outside evaluation of the PASS program concluded that it helped participating students to achieve academically—particularly those interested in sports (Griffin 1997). No studies have yet measured the quality of experience of students participating in PASS with the ESM; however, McCombs and Lauer (2002) assessed the PASS program for its alignment with APA Learner-Centered Principles and outcomes. On almost all measures of learner-centered practices, PASS teachers met or exceeded standards established by learner-centered models of excellence. In turn, students of PASS met or exceeded guidelines for motivation and learning such as the development of self-efficacy, epistemic curiosity, and task mastery goals. In addition, evaluation research conducted by the Mid-continent Regional Educational Laboratory (McREL), one of ten research centers administered by the US Department of Education's Office of Educational Research and Improvement, concluded, "PASS addresses the needs of the whole learner—intellectual needs, motivational needs, and other needs such as students physical and social needs….making it a model for total school reform" (American Sports Institute 2011).

Due to the success of the model for total school reform, in 2002 Kirsch and the American Sports Institute were invited to make a 2 h presentation at a hearing before the California State Assembly Education Committee at the State Capital in Sacramento. Several state Senators also sat in on the hearing to address topics of health and physical education, sport culture, states of consciousness as it relates to how students learn best. At Dr. Kirsch's invitation, I had the honor of presenting research evidence about flow states and engagement in the classroom, along with George Leonard, ASI Director and president of Esalen Institute, and Barbara McCombs of the University of Denver Research Institute. The California Legislature was sympathetic to Kirsh's plea about widespread student disengagement in the state of California and how students might be both healthier and more motivated if only schools were more like sports. They stated that if Kirsch could show that his vision for education based on sports culture could "work" in a whole-school setting, they would consider it as a model of reform for education in California.

Taking the Legislature up on its offer, ASI is now in the development phase of applying the model to a whole school, called the *Arete School of Sport Culture and Wellness* in San Rafael, California. Arete is defined as "A continuous striving for excellence in an integrated and balanced physical, mental, and spiritual way" (American Sports Institute 2011). The goal of the pre-K-12 Arete School is to use

positive aspects of sports culture to enable students to achieve high academic and health and fitness levels, as well as a passion for learning. It will be designed specifically to value and attend to the needs of the whole child—physical, social, emotional, and cognitive—and to obtain the results found to be lacking in public schools. The school will be philosophically based on two themes—sport culture and wellness—through a balanced and integrated approach to the arts, humanities, sciences and minimal proficiency in both English and Spanish.

Provided with a curriculum that is designed to be engaging, relevant, and challenging in a safe and nurturing learning environment, students will be encouraged to pursue activities that they love, perform at a high level (like professional athletes), and reach their full potential. Curricular offerings will include Language Arts and International Languages, Life and Physical Sciences, Math, Performing and Fine Arts, Social Sciences, and Physical Education including Yoga, Tai Chi, Aikido, and Strength and Flexibility Conditioning. Students will also be accountable for their ABCs: *A*erobic capacity; *B*lood pressure, blood sugar, and body composition; and *C*holesterol level. In addition to achieving mastery in reading, writing, math, and public speaking, equally important (but less common) competencies targeted include the ability to: work and play; use technology; work independently and with others; be healthy and fit; practice physical coordination and flexibility; respect one's personal, social, and natural environment; experience a sense of place and local, regional, national, and international belonging; demonstrate patience, perseverance, humility, and other important character attributes; and most of all, love learning.

A model for extended learning time, the school would be open from 7:00 a.m. to 6:00 p.m. year round in 12–16 week intervals, with 2–6 week breaks in between in which the school would remain open for less structured projects and volunteer work. Because the daily schedule provides ample time to complete all work at school, no homework is assigned. The Arete School believes that it is important for children to enjoy what time they have with their families; in turn, parental and community involvement would be integral to running the school (American Sports Institute 2011). Parents would be invited to visit any time, as well as required to have regular meetings with school staff and contribute to the school's operations.

Have you ever noticed the incredibly high degree of expertise and knowledge professional baseball players and coaches have at their disposal for nearly every situation they confront on the field, as is true in all professional sports? For example, pitchers know relative percentages of success for each pitch type and strike zone target for each batter they face, and similarly, the batting team has an intimate knowledge of the probability of given outcomes for each type of play they can attempt. The Arete School is based on the premise that if there were only a small fraction of money and attention that society invested into the profession of teaching as the profession of sports, such that teachers and students showed up to give their best performance every time they stepped into the classroom, we would likely begin the process of getting instruction down to a science much as we have done for baseball over the past hundred years. Of course, society would need to value education at the same level as professional sports, and the type of research as described in

Chaps. 6 and 7 would need to be more fully developed, neither of which would be an easy feat, but the Arete School hopes to take as step in that direction.

At first, Kirsch set out to create a charter school based on the principles of sports culture. However, soon he learned that even charter schools were too beholden to public school testing and other requirements to implement a radical departure from public education (in fact, on average, charter schools in California perform no better academically than public schools). At the same time, two criteria would be essential if it were to be truly useful as a model for future public education: (1) the student population (and staff) must be similar to that of public schools, which, for Northern California means that 40 % of all students must come from low-income, minority families, most of which will be Latino; and (2) the school would not have the financial advantages of a private school from high-priced tuition. The solution was a private school operating *as if it were a public school* in terms of being tuition-free and open to all students (with selections made through a lottery system as necessary). Because it will say, "No, thank you" to public funds in order to be free of all governmental regulations, however, it will be funded through private sources including foundations, individuals, parents, alumni, and the general public through special events (see American Sports Institute 2011).

The school will be continually engaged in research in order to evaluate the school's effectiveness and make needed improvements. To create awareness about what ASI does in order to complete the mission of serving as a model for the public school system in California, The Arete School will use internal and external research studies as resources to conduct workshops, seminars, presentations, conferences, and symposia, reporting regularly to members of the California Legislature. Eventually, the Arte School will become a certified, public school, teacher training institution (American Sports Institute 2011). Ultimately, the Arete School hopes to be a model not just for reforming schools, but for transforming them into places that, just like the athletic field, individuals come to be engaged in activities that they enjoy, demonstrate their signature character strengths, perform at their highest levels, and show care and concern for others—that is, places where they come to be in flow.

Conclusion

In this chapter, we reviewed three models of private schools with empirical evidence of engaging students: Montessori schools, The Eagle Rock School, and the planned Arete School in San Rafael, California, based on the piloted PASS program. Montessori philosophy is built around reverence for the child. In contrast to public schools, Maria Montessori believed that mental development was dependent on movement, and that overall development was dependent on autonomous actions and the cultivation of interests in the world. Students perform chosen activities at their own pace rather than working on a set curriculum in lockstep with the other students in the class. Learning in the Montessori environment is fundamentally experiential

and episodic. Montessori philosophy places a premium on the powers of concentration when interacting in a prepared environment. In practice, Montessori students are encouraged to learn via flow and deep absorption. Teachers facilitate this in part by facilitating each student to enter their *zone of proximal development* in which the activity provides an ideal stretching of active skills to stimulate fresh learning. Montessori in practice can also be described as situated and contextualized learning, with much of it occurring in nature and outside of classrooms. While there are fewer Montessori high schools than elementary and middle schools, the ideal Montessori high schools are based on the concept of Erdkinder, which consists of a great deal of outdoor learning while running a farm as a business in community with peers, teachers, and advisors. Rathunde and Csikszentmihalyi's (2005a, b) ESM studies found that students in Montessori high schools were significantly more engaged, reporting more positive experiences at school and perceiving their classmates to be friends to a greater extent, than a matched sample of students in traditional public high schools. Montessori schools remain an important and hopeful model because of the wide scale of implementation; it is estimated that there are approximately 4,000 certified Montessori schools in the United States and 7,000 worldwide (The International Montessori Index 2012). However, most of these schools are early childhood or elementary schools. Thus, while Montessori made wide-scale advances in engaging young children in schooling, doing so for older children and adolescents has remained elusive—which is one reason it is the focus of this book.

The Eagle Rock School provides another compelling private school example of engaging students, who, before entering the Eagle Rock, had experienced only failure in school. Like Montessori schools, there are no grades, and therefore there is no failure. And like Montessori, there is also a high degree of overlap between the schools philosophy of ideal learning and the theory of flow. The culture of the school revolves around the foundational values of a learning environment rather than a testing environment, nurturing relationships, principles rather than rules, and democratic life. Rather than credit hours and a set curriculum for all students, instruction centers around their "five expectations": expanding one's knowledge base, effective communication, creating and making healthy life choices, engaging as a global citizen, and practicing leadership for justice. About 90% of Eagle Rock students go on to graduate from high school, and test scores invariably indicate significant improvement in academic competencies. The vast majority of Eagle Rock graduates who could not find success anywhere before entering the school have gone on to obtain college and graduate degrees; get married and have families; and serve in the military. Individual testimonies suggest that even the hardest to engage at the time of admission became deeply immersed and committed at Eagle Rock.

Similarly, the planned Arete School in San Rafael, CA, based on the PASS program also represents a radical departure from mainstream public education in the service of engaging students. Based on the PASS program, the Arete School seeks to infuse the entire schooling experience with positive aspects of sports culture such as self-paced learning, mastery-based learning, active engagement, coaching method of instruction, performance-based and project-based learning, team-oriented

learning, and character development. Because PASS recognizes the importance of monitoring one's inner psyche in order to progress towards states of deep concentration and engagement, flow is also central to its philosophy. Assessing the PASS program for learner-centered principles and outcomes, McCombs and Lauer (2002) found that the PASS teachers met or exceeded standards established by learner-centered models of excellence; and students of PASS met or exceeded guidelines for motivation and learning such as the development of self-efficacy, epistemic curiosity, and task mastery goals.

There is much overlap among the models presented. All of the models are centered around students and relationship building. All emphasize the autonomous building of interests over a prescribed curriculum, and community building and over hierarchical control. Most especially, they all carefully design the school to build an entire culture of engagement and learning through flow experiences.

References

American Sports Institute. (2011). *Programs and services: The Arete school.* http://www.amersports.org/progandserv/areteschool.html. Accessed 21 Oct 2011.

Athavanker, U. A. (1999). Gestures, mental images and spatial reasoning. In J. S. Gero, & B. Tversky (Eds.), *Visual and spatial reasoning and design* (pp. 103–127). Sydney: Key Centre of Design Computing and Cognition: International Conference on Visual and Spatial Design.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42.

Campos, J. J., Anderson, D. I., Barbu-Roth, M. A., Hubbard, E. M., Hertenstein, M. J., & Witheringston, D. (2000). Travel broadens the mind. *Infancy, 1*(2), 149–219.

Carnegie Council on Adolescent Development. (1989). *Turning points: Preparing American youth for the 21st century*. New York: Carnegie Corp.

Cordova, D. I., & Lepper, M. R. (1996). Intrinsic motivation and the process of learning: Beneficial effects of contextualization, personalization, and choice. *Journal of Educational Psychology, 88*(4), 715–730.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Perennial.

Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. New York: Basic Books.

Csikszentmihalyi, M., & Schneider, B. (2000). *Becoming adult: How teenagers prepare for the world of work*. New York: Basic Books.

Damasio, A. (1994). *Decartes' error*. New York: Penguin.

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125*(6), 627–668.

Dewey, J. (1910/1997). *How we think*. Mineola: Dover.

Easton, L. B. (2008). *Engaging the disengaged: How schools can help struggling students succeed*. Thousand Oaks: Corwin Press.

Easton, L. B., Condon, D., & Soguero, M. (2014). Engaging the disengaged: Engaging at-risk students at Eagle Rock School and Professional Development Center. In D. J. Shernoff, & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbook by Teachers College Record.

Engelkamp, J., Zimmer, H. D., Mohr, G., & Sellen, O. (1994). Memory of self-performed tasks: Self-performing during recognition. *Memory and Cognition, 22*(1), 34–39.
Flavell, J. H. (1963). *The developmental psychology of Jean Piaget*. New York: D. Von Nostrand.
Gallagher, S. (2005). *How the body shapes the mind*. New York: Oxford University Press.
Gamoran, A., & Nystrand, M. (1992). Taking students seriously. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 40–61). New York: Teachers College Press.
Gang, P. (2001). Some characteristics of a Montessori Erdkinder compromise. *NAMTA Journal, 26*(3), 233–238.
Griffin, R. (1997). The PASS program: Teaching engagement skills. *Kappa Delta Pi Record, 33*(4), 132–134.
Harackiewicz, J. M., Barron, K. E., Tauer, J. M., & Elliot, A. J. (2002). Predicting success in college: A longitudinal study of achievement goals and ability measures as predictors of interest and performance from freshman year through graduation. *Journal of Educational Psychology, 94*(3), 562–575.
Johnson, M. (2007). *The meaning of the body: Aesthetics of human understanding*. Chicago: University of Chicago Press.
Jordan, H. J. (2001). Montessori high school. *NAMTA Journal, 26*, 259–269.
Kahn, D. (2001a). Hershey Montessori Farm School, 2001: Unmasking individual truth. *NAMTA Journal, 26*(3), 393–407.
Kahn, D. (2001b). The Kibbutz, boy's town, Williamsburg, and the Montessori Erdkinder. *NAMTA Journal, 26*(3), 239–254.
Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh*. New York: Basic Books.
Lillard, A. S. (2005). *Montessori: The science behind the genius*. New York: Oxford University Press.
McCombs, B. L., & Lauer, P. A. (2002). *PASS passes the learner-centered test*. Aurora: Mid-continent Regional Educational Laboratory.
Montessori, M. (1936/2001). Dr. Montessori's third lecture. *NAMTA Journal, 26*(3), 175–188.
Montessori, M. (1937/2001). A new education for the secondary school. *NAMTA Journal, 26*(3), 189–198.
Montessori, M. (1938/2001). Twenty-eighth lecture of the twenty-third international Montessori course. *NAMTA Journal, 26*(3), 199–207.
Montessori, M. (1949/1988). *The absorbent mind* (1st ed.). Oxford, UK: Clio Press.
Montessori, M. (1973). *From childhood to adolescence*. New York: Schocken Books.
Montessori, M. (1989). *The child, society, and the world: Unpublished speeches and writings* (Vol. 7). Clio: Oxford.
Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*(3), 328–346.
Noice, H., Noice, T., & Kennedy, C. (2000). Effects of enactment by professional actors at encoding and retrieval. *Memory and Cognition, 8*(6), 353–363.
Rathunde, K. (1993). The experience of interest: A theoretical and empirical look at its role in adolescent talent development. *Advances in Motivation and Achievement, 8*, 59–98.
Rathunde, K. (1996). Family context and talented adolescents' optimal experience in school-related activities. *Journal of Research on Adolescence, 6*(4), 605–628.
Rathunde, K. (2003). A comparison of Montessori and traditional middle schools: Motivation, quality of experience, and social context. *NAMTA Journal, 28*(3), 13–52.
Rathunde, K. (in press). Understanding optimal school experience: Contributions from Montessori education. In D. J. Shernoff, & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbook by Teachers College Record.
Rathunde, K., & Csikszentmihalyi, M. (2005a). Middle school students' motivation and quality of experience: A comparison of Montessori and traditional school environments. *American Journal of Education, 111*(3), 341–371.

Rathunde, K., & Csikszentmihalyi, M. (2005b). The social context of middle school: Teachers, friends, and activities in Montessori and traditional school environments. *The Elementary School Journal, 106*(1), 59–79.

Renninger, K. A. (2000). Individual interest and its implications for understanding intrinsic motivation. In C. Sansone & J. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation* (pp. 373–404). New York: Academic.

Renninger, K. A., Hidi, S., & Krapp, A. (1992). *The role of interest in learning and development*. Hillsdale: Erlbaum.

Ryan, R. M., Koestner, R., & Deci, E. L. (1991). Ego-involved persistence: When free-choice behavior is not intrinsically motivated. *Motivation and Emotion, 15*(3), 185–205.

Sansone, C., & Harackiewicz, J. M. (1996). "I don't feel like it": The function of interest in self-regulation. In L. L. T. A. Martin (Ed.), *Striving and feeling: Interactions among goals, affect, and self-regulation* (pp. 203–228). Mahwah: Lawrence Erlbaum Associates, Inc.

Sansone, C., & Harackiewicz, J. M. (2000). *Intrinsic and extrinsic motivation: The search for optimal motivation and performance*. San Diego: Academic.

Scardamalia, M., & Bereiter, C. (1994). Computer support for knowledge-building communities. *The Journal of the Learning Sciences, 3*(3), 265–283.

Schwartz, D. L., & Black, T. (1999). Inferences through imagined actions: Knowing by simulated doing. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 25*(1), 116–136.

Shernoff, D. J., Csikszentmihalyi, M., Schneider, B., & Shernoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18*(2), 158–176.

Sizer, T. (1984). *Horace's compromise: The dilemma of the American high school*. Boston: Houghton Mifflin.

Stephenson, M. E., & Joosten, A. M. (1976/2001). Erdkinder: The experiment for the experiment. *NAMTA Journal, 26*(3), 209–231.

The International Montessori Index. (2012). FAQ's. http://www.montessori.edu/FAQ.html. Accessed 17 Oct 2012.

Thompson, E. (2007). *Mind in life: Biology, phenomenology, and the sciences of mind*. Cambridge, MA: Harvard University Press.

Chapter 11
Alternative Public School Models

Introduction

The whole-school models discussed in Chap. 10 were selected both due to empirical evidence suggesting that student experiences and engagement in the school were high, and because the school environment was illustrative of some useful strategies to engage students. While these are inspiring models, public schools obviously do not have the same revenue streams generated from higher tuitions as private schools. Therefore, empirically supported models of other public schools using alternative designs and methods from the "traditional" approach are important. Educators need to know how much headway can be made to engage students using models in which they can be sure that the difference is due to not *only* a discrepancy in resources, and which are truly implementable in the public school environment. In this chapter, we present three models of alternative public high schools that research has shown to be engaging: (1) The Murray High School in Charlottesville, Virginia (a Glasser Quality School); (2) Nova High School in Seattle, Washington; and (3) Mango High School (a pseudonym) in Australia.

The National Center for Education Statistics (NCES) defines an *alternative school* as a public elementary/secondary school that addresses the needs of students which typically cannot be met in a regular school, and provides nontraditional education which is not categorized solely as regular education, special education, vocational education, gifted and talented or magnet school programs (U.S. Department of Education 2002, p. 55). In many communities, alternative schools serve as a primary prevention strategy for alarming national dropout rates (see Chap. 1). According to the NCES, there are over 10,000 alternative schools serving more than 600,000 students, and at least one in 39 % of all school districts. There are also a growing number of empirical studies on alternative high schools (e.g., Alliance for Excellent Education 2009; Fine 1991; Munoz 2002; Schussler 2009). When at their best, alternative schools take a comprehensive approach to creating a supportive environment for deep relationship building (Jones 2011).

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Murray High School in Charlottesville, Virginia

Murray High School (MHS) in Charlottesville, Virginia, is a small, public alternative school for the local county district. As a charter school, it was designed as a dropout prevention program for students experiencing academic or social difficulty in one of the large public high schools in the district (Jones 2011). It enrolls approximately 110 students in grades 9–12. It is ethnically very homogeneous, somewhat more so than the rest of the district (91 % White, 5 % African-American, and 4 % other, compared to 79 % White and 15 % African-American for the rest of the district). Despite having a student population at high risk for poor academic outcomes who usually view themselves as not fitting in with mainstream school subcultures, it has a graduation rate of 93 %, higher than the state (79 %) and district (86 %) average, as well as the national graduation rate for schools with comparable demographics (75 %, according to NCES; Cataldi et al. 2009). It also outperforms schools in the rest of its district and state on average standardized achievement test scores in English, math, and science (Jones 2011). On these indicators, MHS qualifies as a high performing school compared to the rest of the state and district.

In many ways, MHS is typical of other small public high schools. Students attend core courses and electives, and are required to take that same state standardized tests as other public high schools in Virginia. The comprehensive services provided at MHS overlap with those provided by a majority of alternative high schools, which are mostly associated with positive student outcomes, including academic counseling, remedial instruction, and self-paced instruction (Fashola and Slavin 1998). On the other hand, MHS has several distinguishing features which may help to explain student outcomes and experiences.

The school's philosophy is based on William Glasser's (1998b) choice theory. Choice theory asserts a variety of principles and beliefs to promote individual responsibility. It holds that motivation is internal, and it is generally directed towards the fulfillment of five genetically determined human needs for: belonging, power or inner control, freedom or independence, fun or enjoyment, and survival or self-preservation. Individuals also have choices about how they go about satisfying their needs. The first of its ten axioms is: "The only person whose behavior we can control is our own." Another one is: "All long-lasting psychological problems are relationship problems" (also see Wubbolding 2007). Educators have designed schools using choice theory to promote behavioral choices conducive to learning and prosocial behavior (Wubbolding 2007). The main premise of Glasser Institute Schools (see www.wglasser.com) is that students learn best in an atmosphere of positive relationships among students, teachers, administrators, and parents.

Because Glasser (1988) believes that one's relational life determines existential happiness or unhappiness, when Murray High School decided to become a Glasser Institute School, it intentionally designed its educational program around strong and supportive human relationships. Glasser Institute Schools aim at establishing a school environment in which students can obtain a sense of belonging, feel to have control over their academic performance, make developmentally appropriate

choices, and experience school as a joyful place (Wubbolding 2007). Like Montessori schools, MHS targeted the design of the school environment, but for a slightly different reason: They understood that the at-risk students were there only because they wanted to be there, and would leave when they no longer wanted to be there. Thus, leaders of MHS believed that the only control they could exert over the process was their own choice to make the school as inviting as possible. They realized that they would have the opportunity to help students love learning only when the students want to come to school because it is working for them in their lives. And when students come to see education itself as something they *want* rather than *have to do*, they often are no longer content with mediocrity, but begin to derive pleasure from doing quality work.

Consistent with choice theory, MHS teachers and staff attempt to eliminate seven "deadly habits" (criticizing, blaming, complaining, nagging, threatening, punishing, bribing, or controlling), and replace them with the seven caring habits of supporting, encouraging, listening, accepting, trusting, respecting, and negotiating differences. In October 2001, MHS became the first public school to declare itself a Glasser Quality School (Wellen and Abbot 2005). While becoming a Glasser Quality School is a unique journey for every school, the journeys share several common elements, which have become defining criteria for subsequent schools to make progress towards the designation. These criteria include: (a) relationships based on trust and respect, helping, supporting, and encouraging each other, (b) measureable, continuous improvement through concurrent self-evaluation, (c) all students demonstrate competency and continuous improvement, (d) some students demonstrate quality work (with all quality work beyond competence receiving a grade of A or A+), (e) all students and staff learn choice theory and lessen external control, and (f) students enjoy learning, thereby satisfying their need for fun, and see the school as a joyful place (Wubbolding 2007).

In 2008–2009, the school set—and achieved—a 95 % pass rate. By 2009–2010, MHS students were achieving a 100 % pass rate on the tests in reading and science (both chemistry and biology), and many earned perfect scores in English writing. Fifty-eight percent earned an "advanced pass," and many of the math scores were in the 90s out of 100, which is remarkable given the many students who had entered MHS with extreme deficits and negative attitudes in math.

Visiting Murray High School

I was curious to know how a public school could reinvent itself and its record of achievement, so in the fall of 2010, I visited the school to observe it. One of the first questions I asked the staff and teachers I interviewed is what they believed accounted for improved achievement and test performance. The unequivocal answer that came back was *motivation*. Simply stated: the students try hard. Teachers were quick to clarify that while the tests help to add credibility to what they are doing, and that results are important both for the school and for the students, they do not teach to

the tests and generally do not teach facts. They believed the students were simply more engaged, more curious, and poised to learn material at a deeper, conceptual level without having to be prodded. Content knowledge came almost effortlessly along the way. In other words, the school aimed for student motivation, and achievement took care of itself as students aimed for their own learning and academic performance. Staff stated that many education programs are "a mile wide and an inch deep," while MHS tries to do the opposite: allow students to become deeply engaged in some—but not all—topics. Certainly, MHS was a lot like the Montessori and Eagle Rock models in its "less is more" approach to content.

How did MHS target student motivation, and successfully at that? In a sentence, *the academic program was designed to safeguard the developmental needs of the students*. For example, it offers students *choices* to support freely chosen behavior, and *mediation* to support vital relationships within the school. Both choices and mediation are actual sessions. For example, there is a designated class called "Choices" that convenes during the same period every day. Any student who would like to receive counseling about behavioral choices can go to the front office and request it, or attend the Choices class. When Murray students go to the office, they go there to make a plan instead of to get in trouble. They fill out a form that helps them to identify their needs, and then may meet with the principal, a teacher, or a counselor. The counseling sessions are designed to provide a forum for a student to talk through the issue that is disruptive to learning, and to help the student to make a plan for action in order to promote individual responsibility. The student and staff make the plan together before the student returns to the class.

Jones (in press) tells the story of a student who was too tired to stay awake in class from working a late job, despite sincere attempts to do so. The teacher suggested that he put himself in Choices. The student returned and asked if he could call his mother, to which the teacher agreed. He likely went home to catch up on sleep. He was not excused from the lesson, which he would need to make up along with related assignments, in a tutorial session or after school. But the policy allowed for the student to satisfy a physiological need that was interfering with his learning in a responsible way rather than getting into trouble as the only outcome. This is but one simple example of the school's focus on the *causes* of behavior rather than only on the consequences of behavior—with sensitivity towards the students' needs and life circumstances.

When I attended a Choices session, there was a skilled intern in a college-level teacher education program acting as a counselor in addition to the Choices Teacher. The intern observed and also had the opportunity to counsel students who attended. When counseling students, the Choices Teacher first demonstrated an understanding of the student's problem and concern without being critical, led the conversation to a point in which the student could reflect on activities or topics in which he experienced more success, and then asked the student to consider ways of applying that success to other areas or contexts, including the one in which the student was having trouble. The Choices Teacher tried to think through many possibilities with the student so that they were not stuck in black-and-white thinking. MHS wants students to be the creators of their lives and education.

When there are relational conflicts, *mediations* are initiated. Mediations are often between a teacher and student, or two or more students, and mediated by a trained teacher or administrator. Anyone—staff or students—can initiate a mediation. The time that passes between the request and the actual mediation session allows for a natural time out for emotions to calm. During the mediation, both parties are encouraged to be open and honest about their thoughts and feelings. The role of the mediator is not to take sides but rather to validate both and help draw the session towards a consensual solution, which involves a plan to guide future action and behavior. If a plan cannot be agreed upon, the parties must return for more mediation until one can be; mediations are often involved, and multiple meetings are required before a consensus is reached (Jones in press). When a plan is agreed upon, it gets typed up for both parties, with staff routinely checking in on the plan with the student. Whole-school or whole-class issues are often addressed through mediations. Mediations are also built into the culture of the school because they are semipublic and thus the sense that different people are working through a different set of issues is a visible and ubiquitous aspect of the school environment (Jones in press). This creates an atmosphere of relational awareness and sensitivity. Mediations are such an integral part of the school's problem-solving practices that they are not optional. A student agrees to be a part of mediations as a precondition to enrolling in Murray High School. Thus, mediations as well as choices reinforce two of the cornerstones of choice theory that are *intentionally designed* into the school's climate: personal freedom and positive relationships.

The uniqueness of the physical environment and learning community was palpable at Murray. I was immediately struck that staff and students alike did not ignore me as a relative stranger; rather, they welcomed me, shook my hand, and asked who I was. It was only upon reflection that I realized I was not as anonymous as I would have expected: I was a *somebody*, and perhaps this was not accidental. The hallway walls were literally covered with student art projects of all types on display. The classrooms at Murray looked a lot like what I would imagine a Montessorian "prepared environment" would look like for adolescents. A tremendous variety of books, video tapes, computers, and art supplies lined the walls.

The first class I visited was an English class, where students were completing role plays about World War II, much as in Wilhelm's (2008) approach to English (see Chap. 8). In the next class, students were using Google Earth to explore the terrain in Afghanistan. They were exploring why it is difficult to find someone in the mountainous Persian Gulf, and were asked to share differences they found in the terrain when comparing it to their home town of Charlottesville. There was no question that MHS was leveraging technology to their full advantage. The teacher showed me a box full of Amazon Kindles the school had just purchased so that the school's entire library could be shared more easily among students. Also, when there is a problem at the school, it may call "community meetings" with students, teachers, administrators, and using Skype, parents, in order to develop a consensual plan.

The class centered around discussion. Communication skills including listening and recognizing different kinds of learners is a core competency at Murray.

This approach is consistent with research showing that social skills can mediate academic engagement among students with externalizing problems, suggestive that targeting social skills among such students not only improves classroom behaviors, but may also help students to engage in academics altogether (Viadero 2007). As is common practice at the Murray High School, as a visitor I was invited to participate in a discussion at the end of the class, introduce myself, and ask students anything I would like. I asked the students what has made the biggest difference in their future plans or goals since coming to the Murray High School. I was struck that several of the answers converged around pursuing a field or skill of interest (e.g., poetry writing) after encouragement from one of their teachers. Several students said that they always knew that they were interested in a certain activity, and "suspected" that they were good at it, but never "realized" they could have a future doing it until their talents were validated by the teacher. Thus, the teachers made their talent "real" for them.

The learning goals at Murray are geared towards students' achieving mastery in their subjects, not merely passing them. Assignments are individualized to the abilities and styles of the students in order to help them reach these mastery goals. The objective is to support the whole student, including learning and competency goals. Rather than leaving the extent of student learning to vary in a predetermined amount of time, mastery is a firm expectation and the amount of time it takes to achieve it is allowed to vary by student. This approach assures a deepened engagement and quality of learning, and in the process virtually eliminates failure as an acceptable option—failure that is built into traditional schools for a substantial number of students who consistently score towards the bottom of the achievement distribution (Glasser 1975).

Glasser Institute schools like Murray address this problem by *instituting* mastery by force of school policy. Rather than a curricular unit and a standard amount of time being the constant for all students, with mastery versus failure as the variable, Glasser schools do just the opposite: Mastery is the constant for all students, and the time it takes for individuals to achieve it varies. In fact, some of the key staff told me in interviews that they considered "F" grades disrespectful. At least, this is their mentality when they come to MHS. Staff said that it usually takes up to a year to "break through" and witness an authentic transformation in students mentality or attitude towards aiming for mastery rather than fearing failure in school.

The Glasser school is also unique in its scheduling practices. They received permission from the state to discontinue use of the Carnegie unit, and to move from seven to eight periods a day. This allows MHS students to move along in their graduation requirements more quickly, with some students graduating in only 3 years. MHS believes that for the "at-risk" students that they serve, it is important for them to graduate and start earning community college credit as quickly as possible so that they do not languish without seeing the light at the end of the high school tunnel. One of the policies that makes this possible is that of no punishments, owing to the choice theory philosophy that people cannot control others.

Students at MHS are involved in all decision making, and all major school decisions must be consensual. This is true for all Glasser Quality Schools. In fact, all

students, parents, teachers, and staff are considered part of the school design team, and are included even in faculty hiring decisions. Just like at Nova High School (discussed later in this chapter), every member of the community, parents and administrators alike, have one equal vote, but the difference at the Murray High School is that *any* vote can veto a plan of action. The Murray High School prefers this to majority rules, frequently resulting in a disgruntled minority that feels controlled.

Even the decision to become a Glasser Quality High School was decided by consensus. The teachers planned it for 4 years, but in the end, it came down to a yearlong discussion in which the students expressed what they believed were the pros and cons. One sticking point was the elimination of the C grade to allow for a Quality School policy in which the lowest grade given to a student is a B. Because this meant it would not be possible to "get by" with only C-level effort, not all students agreed. Eventually, a consensual agreement was reached (including the agreement of Dr. William Glasser, whom the students e-mailed).

The policy at MHS today, which does not allow students to earn grades lower than a B, is a function of believing that schools cannot manipulate students (knowing that low grades are often perceived as a punishment to control behavior). Rather, the policy targets motivation for doing quality academic work. If doing poor work is not an option, teachers can ask students what their plan for earning credit is, especially since MHS is the last chance to earn a high school diploma for most of the students. Teachers are willing to be flexible and design plans that will help students meet state requirements in order to earn credit, and students are motivated to take an option that helps them to meet this goal instead of experiencing failure. Educators at MHS do not believe that "resistant" learners intentionally resist their own education and learning. When talking to students, however, they usually discover that nobody has ever asked them how they want to reach their educational and learning goals.

Culture at Murray centers around behavioral choices and a strong relational support system. For example, at any time during the school day, students may take a "5-minute walk" with no consequences. This may be a self-imposed time-out to reflect and cool off when upset, or because one is having difficulty keeping attention or staying still in class. Students needing a 5-minute walk notify the teacher, who keeps track of the 5-minute time limit. Some students state that the 5-minute walks help them a great deal when they become unfocused, in order to refresh and regather attention (Jones in press). Teachers testify that the walks mitigate behavioral problems or tensions in the class that might otherwise have resulted in detention or disciplinary action.

There is also a great deal of teacher support. At their previous base schools, often students could not find the help they needed. At MHS, teachers are willing to meet students before school and stay to help them as much as needed after school until 6 p.m. every day. Teachers understand that playing an affirming role for students is an important one. If they don't see the changes in students they are aiming for, they continue to make supportive and positive comments until they do (Jones 2011). Teachers are strongly committed because they believe in the mission of the school. One principle shared by several of the other school models discussed in this book (e.g., Montessori schools, Nova High School) is the imperative of respecting

students. Glasser's "seven deadly habits" and "seven caring habits" were color-categorized and displayed on posters in the classrooms. Red behaviors were disconnecting behaviors, like criticizing, nagging, and other coercive behaviors. Yellow behaviors were connecting behaviors like supporting, caring, and encouraging. As the label implies, connecting behaviors have the primary relational consequence of bringing people closer together, while disconnecting behaviors bring people farther apart. If a student were found to be blaming someone during a choices session, the counselor might reflect to a student, "I hear you making a lot of disconnecting statements. Do you want to tell me why? What would be needed for you to have more connecting thoughts and behaviors?" In choice theory (Glasser 1988), there are four components to one's "total behavior": action, thinking, feelings, and physiological well-being. Much of the behavioral counseling is to help shape students' choices with respect to their thinking about their behavior.

The emphasis on developing social–emotional skills allows students to recognize feelings, cope constructively with stress, and to make positive decisions in difficult social situations (National Research Council 2004; Durlak and Weissberg 2007; Eccles and Gootman 2002). Integrating social and emotional forms of learning represents a fundamental shift from "teaching to the test" to "educating the whole child." The behavioral approach of MHS is so effective that sometimes families request conferences so that the school can help to mediate interpersonal conflicts at home. Parents realize that MHS offers a healthier choice than the natural tendency to give in to anger and try to control one another through harsh language. Moreover, many students spoke of applying the conflict resolution strategies learned at Murray to other contexts, including with employers, friends, one's boyfriend or girlfriend, and family (Jones 2008b). Some students spoke of using choice theory to weigh out complex life options, and to recognize the consequences of all of their actions and choices. They also attested to being able to talk to their parents more easily and with less frustration, and to resolve conflicts in a variety of contexts (Jones in press). Some Murray students referred to choice theory as a "relationship tool" (Jones in press, p. 23). Their experiences at Murray also helped them to be more composed emotionally in other contexts including the workplace, and to be sensitive to the needs of others. This comports with research on metacognition, showing that students can develop effective learning and relational strategies through feedback from teachers and peers, which can be transferred to other domains (Pintrich 2002).

Evidence of Engagement

Jones (2011) conducted an ethnographic and interview study of Murray High School in which all teachers and students were participants. He was a participant observer over the course of 1½ years. A purposive sample of interview participants reflected the demographics of the school and three levels of participation, with eight students representing one of the three categories: new, typical, or highly involved students. Twelve teachers were also interviewed.

Results of Jones' (2008a, b, 2009, 2011) qualitative studies revealed that, grounded primarily in the quality of the relational environment, students experienced a dramatic improvement in their level of engagement at Murray compared to their previous schools. Twenty of the 24 students interviewed described negative experiences associated with their previous school. At least half of the students described difficulties with peers and/or academics, and cited these difficulties as reason for leaving their base school (Jones 2011). Many expressed feeling a lack of respect from peers and/or teachers. Common sentiments included the general perception that nobody cared about them in their base school, not liking the school, and not wanting to go there. Students also described a social separation between teachers and students, and expressed difficulty making friends because friendship groupings and social cliques were deeply entrenched. They also felt that students and teachers were completely separate socially. Some admitted that it was such a struggle that they just gave up.

Conversely, most of these students felt that going to MHS constituted a large improvement in the quality of their experience. As one student said, "This school just helped me so much. I think it's a great place to be. It's kind of like, a kid should hate going to school, but I love going to school now" (Jones 2011), p. 227. Several spoke of it as a transition in which they began to connect with their life choices and goals and welcome personal change. Unlike at their previous school, they cared about learning at MHS, and lost the desire to skip classes (Jones 2011). Some students felt as though they completely "turned themselves around" (Jones 2008b, p. 27), or that the change felt "instantaneous" (Jones 2011, p. 230). Half of the 24 interviewed students said that this process took them one semester; four said it took up to a year (Jones 2011, p. 230).

Supporting the notion that Murray's interventions effectively met the needs of the student population, several stated that mediations helped them to "get over the hump of this transitional period" (Jones 2011, p. 231). Jones witnessed firsthand a new, resistant student who, after having some mediations over some behavioral conflict with his peers, one day just "clicked" and began participating, seeming genuinely interested. When asked why the change, he stated that he had been thinking about what he wants to do and decided that his goal was to earn credit, which was different from just responding to adults' previous requests to "get in line" (Jones 2011, p. 232).

Even seemingly sudden transformations are not truly as instantaneous as they may seem; usually there is a process involved including trust and relationship building, reflection, and goal setting. Nevertheless, the transformation can be dramatic, involving autonomous self-regulation or a "training of the will" discussed as the core issue of engagement in Chap. 2. Students come to see decision making, including long-term decisions as well as the constant, daily decisions of where to direct one's attention and energy, as being at the center of their freedom. Learning how to direct one's attentional resources is closely related to engagement and, as suggested in Chap. 2, a worthy if not paramount educational goal for adolescents.

Students directly testified to feeling more motivated and engaged. They increasingly identified and aligned with school-related values including the importance of

community. Unlike in their previous schools, many were participating in all of their classes and a variety of extracurricular activities (Jones n.d.). One astute student noted that even though the teachers at her base school said they wanted her to participate, there was a sense that they didn't really think that she could or would do so (Jones 2011, p. 228). While it is possible that this comment reflected the student's level of initiative or self-esteem, it also suggested that individual students were rarely personally invited to participate in extracurricular activities. Even if they were open to all students, many students did not see themselves as realistically volunteering, either because the opportunities were few and far between, or because the numbers suggested that only a certain percentage of students could participate. Because Murray is a "hands-on kind of school" (p. 228), with arts, crafts, and hands on science, and English projects the curricular norm, students felt that engagement was a necessary part of the type of education being offered, not just something needed to get good grades (Jones 2011). Facilitated by a service class, highly involved students participated not only in extracurricular activities, but also in community meetings and activities relating to the governing of the school. These students commented on liking being able to help make the school better in a useful way (Jones 2011). They also became more motivated about attending college or community college. Wanting to earn credit and "move on" to improve their life became the firm, personal goal of many students.

Clearly, an enhanced sense of acceptance and belonging at Murray was a large factor in behavioral change. Many students emphasized the importance of relationships and an accepting and tolerant school community for changing their attitude towards school and enhancing their engagement and self-regulation in the learning process (Jones 2011). They felt that all the teachers and staff were open-minded about accepting different kinds of people (Jones in press). Staff got to know them individually, making them feel like part of a "huge 110 person family" (Jones 2011, p. 227). Many students used words and analogies of home and family to describe the learning community. Students stated that the sense of comfort they experienced helped them to grow both inside and outside of the classroom with less stress than they experienced in the past. Students identified close relationships with teachers specifically as a motivating factor, because it made them take their schoolwork more personally. They felt that it was reinforcing to get schoolwork done for teachers whom they knew were doing a lot for them, and that it felt almost disrespectful not to work as hard as they could (Jones 2011). One way that Murray High School deliberately takes steps to foster a sense of belongingness and community building is by planning a school-wide retreat at the beginning of the year with group activities and dinner followed by a community meeting and bonfire.

Not only did students feel that they did not fit in at their base school, but they also said there was constant peer pressure not to be engaged with schooling. Some stated that they lived in fear that their peers would give them a hard time for participating. Testimonies such as this suggest that even among well-intentioned teachers and administrators, relationships were *institutionally detrimental*. The whole-school environment in which students could not fit in or participate created a recipe for inaction, stagnation, and unfortunately for some, depression. At Murray, in contrast,

students found a relational environment in which peers and teachers understood the stresses and pressures students can have outside of school, which at times felt overwhelming. Students were surprised to find that teachers and administrators cared about them as a person, not only as a student (when one thinks about it, perhaps this is a distinguishing feature of a "family" vs. a "school"). Perhaps this statement from one student says it all: "They don't just worry about what assignments I'm turning in; they care about my well-being" (Jones 2011, p. 230). Does this not describe, if not define, the difference between a family and a traditional school?

There also appeared to be strong motivational effects of succeeding in school, as facilitated by the grading policy at Murray. Some students stated specifically that earning good grades, and the gratification of showing those grades to parents, made them feel good (Jones 2008b). This contrasted greatly to the low self-esteem and perceived incompetence they experienced from low grades at their base school. Just like the public school students discussed in Chap. 5, some Murray students experienced psychological devastation from report cards indicating failure or the need to repeat grades, leading some to try to physically alter their report cards (Jones in press). While one might be concerned that the grading policy constitutes a relaxing of standards, it is actually more of a raising of standards. Because C, D, and F work is not accepted, students cannot "just get by" in their academics, but rather must continue working until competency or mastery is obtained. In other words, there are only two options: to do well, or to keep working. From the subjective comments of students, it appeared that the mastery orientation of the school had positive effects. For example, 84 % of the students said they took more responsibility for their education at Murray compared to their previous school (Jones 2009). Students felt to have more control over their education and their lives by virtue of being entrusted with more choices.

True to the environmental challenge and support model (see Chaps. 6 and 7), students also appreciated that teachers and staff did not entirely leave them to their own devices but checked in on them and offered their guidance as needed (Jones 2009). Indeed, the majority of students stated that the MHS's mastery approach helped them to do quality work and succeed in their academics. Seventy-two percent of students interviewed believed the work was appropriately challenging (Jones 2009), which is key to enhancing motivation because it keeps students in the zone of proximal development, thus making them more likely to be in flow. To match challenge to skills, teachers need to have an intimate understanding of students' ability level, which teachers at Murray get to know fairly quickly so that they can individualize or make alternative assignments for students. There is an imperative to "meet" students where they are "at" academically, necessitating a level of individualization teachers refer to as a "mini IEP" (Jones 2009).

In sum, the at-risk students in Jones' ethnographic studies saw little relevance of schooling at their base school, and associated their experience with a variety of social and academic problems. However, the narratives of students at Murray demonstrate that schools can provide much needed support for such students through an intentional focus on developmental needs. Students at Murray testified to an increased sense of autonomous regulation, intrinsic motivation, and engagement in

learning (Jones in press). They also felt empowered to handle life choices, relationships, and their own emotions both in school and other contexts. Furthermore, they learned how to resolve conflicts more responsibly and satisfactorily.

Nova High School in Seattle, Washington

The Nova High School (NHS; see http://novahs.seattleschools.org) is a nontraditional urban public high school in Seattle, Washington. It serves a student population of approximately 300 students, with a teacher-to-student ratio of approximately1:25. It consistently achieves among the highest SAT scores among high schools in Seattle. It is considered "nontraditional" mainly because decisions regarding school policies, budget, public relations, hiring and recruitment of teachers, administration, and students are made by committees of students, administrators, and teachers. Also, there is no grading; rather, students earn credit for passing courses based on completing the work at an 80 % level of mastery. The school offers an unusual diversity of courses and supports students' autonomy in selecting and attending them. Students also decide which classes to attend without consequence (Johnson 2004). Curricular and learning goals are developed in the form of contracts developed and monitored by teacher advisors in conjunction with students. A faculty coordinator or advisor works closely with each student on the designing and reaching of personal and educational goals. In addition, class attendance is not compulsory (Johnson 2008).

Similar to that described at Eagle Rock School (see Chap. 10), the community climate among teachers, students, and administration at NHS fosters mutual respect, involvement, and fairness. Egalitarian relationships are promoted due to its democratic, nonhierarchical governance (students have an equal vote to staff and administrators, even the principal). Unlike Eagle Rock, the school does not serve exclusively "at-risk" students, however. Due to non-compulsory class attendance, a collaborative learning environment is created in classrooms especially; students and teachers are partners in learning and "really want to be there" (Johnson 2004, 2008).

Similar to Rathunde and Csikszentmihalyi's (2005a, b) studies of Montessori middle schools discussed in Chap. 10, Johnson (2004, 2008) collected ESM data from students ($n=80$) attending the Nova High School, and compared these data to students ($n=80$) in a comparable, demographically matched public school from the Sloan Study of Youth and Social Development (described in Chap. 4). The comparison school served approximately 1,000 students with a teacher-to-student ratio of 1:17. Both schools were in predominantly African-American neighborhoods.

Again the ESM methodology was used in which students reported their subjective experiences when signaled by pre-programmed wristwatches at random times throughout the day. As in previous ESM studies (e.g., Shernoff 2010; Shernoff et al. 2003), student engagement was conceptualized as "students' involvement and experience during learning" (Johnson 2008, p. 71) and "when an individual is

emotionally and cognitively engaged" (p. 72), and measured as the average of concentration, interest, and enjoyment ($\alpha = 0.758$).

Results revealed marked differences in time use by instructional format. NHS students reported spending 61 % of their time in collaborative learning activities compared to 15 % for students in the traditional high school. In contrast, students in the traditional school spent 85 % of their time listening to lecture, watching a video, or doing independent seatwork. This aligned with similar analyses of the full, nationally representative sample from the SSYSD study, in which participants reported spending 86 % of their time in such activities (Shernoff et al. 2000).

In terms of the quality of experience, NHS students also reported significantly higher levels of engagement in school than those from the traditional school (Johnson 2008). The difference was moderate in effect size. Perhaps most interestingly, engagement of students in the traditional school was higher in out-of-school time than in-school time, a common finding in the public schools (see Chap. 12). Just the reverse trend was reported by NHS students, who reported substantially higher engagement in school than out of school. NHS students reported higher engagement than traditional students in all of the academic activity categories examined, including during lecture, collaborative learning, and independent work. Thus, at NHS, lectures were much more infrequent but students found them to be more engaging when they did occur. Consistent with Rathunde and Csikszentmihalyi (2005a, b) findings on engagement in Montessori schools, concentration was relatively high in both schools during academic work, but interest and enjoyment was substantially higher among students at NHS (effect sizes were moderate to large).

Overall, high engagement in the NHS appeared to be influenced by students' sense of belongingness and autonomy in particular. Belongingness was created by a whole-school shared governance in which students are equal participants, and autonomy was fostered by curricular policies in which students decided, in collaboration with a faculty advisor, what their goals were and which courses would best help to meet those goals. In these conditions, students' interest, enjoyment, and concentration were simultaneously stimulated and worked in concert.

The study extends Rathunde and Csikszentmihalyi's (2005a) claim (from middle schools to high schools) that consciousness is frequently divided in the public school system, in that students experience high concentration and salience, without true interest and enjoyment. This experiential profile of "drudgery" is reported especially during lectures and passive listening, a high frequency activity in the public school system unlike in the Montessori middle schools and the Nova High School. In both models, attending to students' interests and emphasizing collaborations with peers and adults that students enjoy stimulates adolescents' overall engagement and concentration. At Nova, even lectures become engaging and "speak" to students in the context of their prior goals, interests, and plans.

Johnson's (2008) study supports the argument that a strong emphasis on relational and collaborative learning is an effective way to meet the motivational needs of students. This is especially true in adolescent years when individuals begin to rely heavily on relationships outside of the family, including with friends, peers, and teachers, for direction, guidance, and identity development (Erikson 1968; Kegan

1982; Montessori 1973; Steinberg 2010). Collaborative activities include the coordination of academic, social, and achievement goals, and encourage peer interaction in the process of reaching these goals (Urdan and Maehr 1995). Just the opportunity for students to have their voices heard leads to a sense of autonomy, agency, competency, and belonging, factors all associated with motivation and engagement in adolescence (Deci 1996; Schunk et al. 2008; Urdan and Turner 2005).

Mango High School (a Pseudonym) in Australia

As discussed in Chap. 1, there is increasing evidence that schools internationally are not meeting the needs of young people, who in turn feel disconnected from school (Lumby 2011, n.d.; Smyth and Fasoli 2007; Willms 2003). Mango High School (a pseudonym) serving socioeconomically disadvantaged youth in Australia (Smyth and Fasoli 2007) came to believe that their significant problems with retention, truancy, violence, student disengagement, disaffection, and alienation represented a "crisis of authority" in the battle for engaging students—meaning that the students had little intrinsic motivation to do what they are supposed to do, and the staff had little power to force them. A great variety of cajoling techniques, including warnings, yelling, detention, shaming, begging, bribing, threatening, and praising are notoriously unreliable and can take those in a position of authority only so far. Even in Australia, Smyth and Fasoli came to a similar conclusion as that reached by many of the US studies on engagement (see Chap. 7) as illustrated by many of the previous models discussed: Students are attracted (or not attracted) to school for the quality of human relationships and communal experiences involved (Sidorkin 2002). Significantly adding to the crisis of authority is that fewer and fewer students will sit and absorb what they consider to be irrelevant information when there are so many exciting learning experiences outside of school that are relevant to their lives (Comer 2004). This problem is exacerbated by the Internet age, in which students can learn what *is* relevant to them quickly and easily.

Smyth and Fasoli (2007) were interested in the socially constructed conditions that could enable students who might otherwise drop out to stay in school. Much like Murray High School, Mango High School made a collective effort in which both students and teachers worked together to move students along a path towards a mutually valued end. Given the willingness to embrace a fresh start free of punishments and blaming of student deficits, the starting point was one of optimism and hope. Operating in difficult and complex circumstances, the school endeavored to reinvent itself by placing strong and healthy relationships at the center of all areas of activity, much as Murray HS did. Like most of the previous models, the transformation the school underwent was consistently described in terms of developing respect for one another as worthwhile and valued individuals, including one's backgrounds, aspirations, and future goals. In addition to staff coming to seeing students as full human beings, this also provided an opportunity for students to see the human side of their teachers.

Smyth and Fasoli (2007) conducted an ethnographic case study of Mango High School over a 5-week period. They used "embedded interviews" in which observations of in-class instruction preceded 1-h focus group interviews with teachers and students. In addition to recording the interviews, detailed field notes were kept from class meetings as well as school assemblies, staff meetings, and informal conversations among teachers.

At the center of the focus group discussion was what the researchers labeled, "relational power," a sense of agency over one's learning drawing sustenance from the collective social capital and relational trust of the community (Smyth and Fasoli 2007). This is described as a school culture with trust at all levels of the organization including students' trust in teachers, creating an environment for effective learning (Bryk and Schneider 2002). The strength of the relational trust resulted from the perceived power to get things done collectively, and for students to have a say in their learning. The school defined "caring relationships" not in terms of democratic ones in which students and teachers have equal power (even though some students commented that the teachers "treated them as equals" (Smyth and Fasoli 2007, p. 286)), but rather by an ethical use of relative power or authority, involving restraint for asserting one's own power in deference to serving students' goals and needs (Nakamura and Shernoff 2009). Teachers recognized that students were living in a world of multiple realities—for example, the reality of school, home, and peers—and adjusted their academic expectations for them in alignment with this more comprehensive understanding (Smyth and Fasoli 2007).

Results of Smyth and Fasoli's (2007) study revealed numerous positive outcomes of the school's intentional design to tend to the quality of relationships. Students felt that they received more attention from their teachers with smaller classes, that everyone knew each other, and that teachers really communicated and cared about students' futures (Smyth and Fasoli 2007). Students believed that teachers were truly there for them, truly "gave a damn," and helped them with their goals and time management (p. 288). Some students stated they felt like they related to the teachers as friends more than as typical teachers. The staff trusted each other to get things done collectively and "go the extra mile" for the benefit of the students (p. 281), and much like at Murray, students responded by stating they wanted to show their respect for the teachers. Students testified that because the staff respected them, they reciprocated by respecting the staff.

The improvement in relationships allowed for most of the energy to be placed on rigorous learning. The combination of teacher involvement and expectations of rigor modeled the support and challenge dimensions that so frequently promote students' engagement. A consistent comment from students was on the overlap between learning and the fun or enjoyment they experienced in the context of authentic interpersonal interactions in which their perspectives were respected. One student said, "Our physics teacher is really good and we have fun in the class but we learn a lot and we really enjoy it" (Smyth and Fasoli 2007, p. 287).

Conclusion

In addition to providing three additional models for engaging youth within the public school system, the models presented in this chapter help us to begin seeing patterns among engaging whole-school models. For example, given the importance of high stakes testing in the public schools, one can imagine the limited range of topics around which students and teachers may converse in today's educational environment. They tend not to be the sort of conversations that bring each other closer. This stands in contrast to Glasser Quality School's intentionally designing the school around supportive relationships, as illustrated by explicitly identifying and displaying on classroom walls in color-coated posters both "connecting" and "disconnecting" behaviors (i.e., behaviors that bring people closer or father apart) and providing numerous opportunities for students to improve their relations such as mediations with teachers.

The possibility of forming close relationships with teachers is made only more challenging as adolescents move into high school and middle school and no longer have one primary teacher with whom to spend a significant part of the day. This underscores the notion that policies for public education should be reviewed for their effect on relationships, especially their potential to constrain them (Rhodes 2002). However, positive relationships cannot just be "added on" as when fortifying Wonder Bread. Models like Montessori and Glasser schools make sufficiently clear that positive relationships are the product of authentic learning communities, the creation of which is not accidental but *is intentionally built into the structure of schooling* in every way. Thus, if schools want to know how to build positive relationships, the best approach is to start with them, and then add on the rest of the school structure, very much as the Glasser Quality School model did.

Like the private school models, the models presented in this chapter attend to the needs of individuals in order to ignite and sustain student motivation and engagement. Collectively, the models help us to expand our conception of *optimal learning environments* in the classroom to the whole-school environment. Much like in classroom environments, optimal whole-school learning environments foster a sense of relevance, belongingness, and relatedness in the context of strong student–teacher relationships; stimulate interactivity among the teachers, staff, and students; and facilitate the building of new skills through providing students both autonomy and responsibility. The Nova school model further illustrates that students' sense of belongingness, autonomy, equal relationships with staff, and the right to self-governance, can go a long way towards creating and sustaining optimal learning environments.

The Mango High School in Australia illustrates that public schools can reinvent themselves by recognizing the inadequacies of a punitive educational approach and replacing it with the relational work necessary for establishing boundaries for respect (Smyth and Fasoli 2007). Only then do participants in the community realize that learning is almost impossible in the absence of relational trust. The model also shows that it is imperative to maintain principles of rigor for learning, but that

even students from disadvantaged backgrounds will frequently meet rigorous demands when teachers are involved and concerned about their learning process. Smyth and Fasoli (2007) also note that being communicative with parents and the wider community about their efforts, including their motivations, challenges, and successes, can also be extremely important in overcoming the many obstacles on the "road to student engagement and learning in a challenging high school" (Smyth and Fasoli 2007, p. 273).

While creating a whole-school climate around the principles demonstrated by these models may be easier said than done, it is encouraging to realize that the most important factors are human ones, and are therefore malleable and controllable. It has been argued that the key is school design targeting these factors from its inception; however, many educators and administrators may find themselves wanting to improve engagement in schools that did not do so. Where this is the case, both the Murray High School and Mango High School examples illustrate that a fairly significant school reorganization in which the school "reinvents" itself may be necessary, and it is possible. These models also illustrate that there will be many obstacles and stumbling blocks along the way, and that resolve is therefore necessary; even then, change is likely to be slow and gradual.

As William Glasser (1998a) asserted, we may have gone as far as we can go with the traditional structure of our secondary schools. Even though many of the models described in this and the previous chapter were intentionally small in size in order to harbor closer and stronger interpersonal relations, this was not always the case. The intentional designing of relational and socioemotional support to meet students' needs may be a greater factor for fostering engagement and satisfaction with schooling than merely class or school size.

References

Alliance for Excellent Education. (2009). *Communities in schools' performance learning centers: Utilizing student supports and alternative settings for dropout prevention*. Washington, DC: Alliance for Excellent Education.

Bryk, A. S., & Schneider, B. (2002). *Trust in schools: A core resource for improvement*. New York: Russle Sage Foundation.

Cataldi, E. F., Laird, J., & KewalRamani, A. (2009). *High school dropout and completion rates in the United States: 2007 (NCES 2009–064)*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U. S. Department of Education.

Comer, J. (2004). *Leave no child behind: Preparing today's youth for tomorrow's world*. New Haven: Yale University Press.

Deci, E. L. (1996). *Why we do what we do*. New York: Penguin.

Durlak, J. A., & Weissberg, R. P. (2007). *The impact of after-school programs that promote personal and social skills* (p. 50). Chicago: Collaborative for Academic, Social, and Emotional Learning (CASEL).

Eccles, J. S., & Gootman, J. A. (2002). *Community programs to promote youth development*. Washington, DC: National Academy Press.

Erikson, E. H. (1968). *Identity: Youth, and crisis* (1st ed.). New York: Norton.

Fashola, O. S., & Slavin, R. E. (1998). Effective dropout prevention and college attendance programs for students placed at risk. *Journal of Education for Students Placed at Risk, 3*, 159–183.

Fine, M. (1991). *Framing dropouts: Notes on the politics of an urban public high school*. New York: State University of New York Press.

Glasser, W. (1975). *Schools without failure*. New York: Harper.

Glasser, W. (1988). *Choice theory: A new psychology of personal freedom*. New York: Harper Perennial.

Glasser, W. (1998a). *Choice theory in the classroom*. New York: Harper Perennial.

Glasser, W. (1998b). *Choice theory: A new psychology of personal freedom*. New York: Harper Collins.

Johnson, L. S. (2004). *Academic engagement from the perspective of flow theory: A comparative analysis of nontraditional and traditional schools*. Unpublished doctoral dissertation, Northern Illinois University, DeKalb.

Johnson, L. S. (2008). Relationship of instructional methods to student engagement in two public school settings. *American Secondary Education, 36*(2), 69–87.

Jones, J. N. (2008a, April). *The influence of school identification on participation and engagement in an alternative high school: An interpretive ethnography.* Paper presented at the annual meeting of the American Educational Research Association, New York.

Jones, J. N. (2008b, April). *Supporting developmental needs and student engagement in an alternative high school: The role of choice theory.* Paper presented at the annual meeting of the American Educational Research Association, New York.

Jones, J. N. (2009, April). *Mastery learning and student engagement in an alternative learning environment: A mixed methods study of school support and student experiences.* Paper presented at the annual meeting of the American Educational Research Association, San Diego.

Jones, J. N. (2011). Narratives of student engagement in an alternative learning context. *Journal of Education for Students Placed at Risk (JESPAR), 16*(3), 219–236.

Jones, J. N. (n.d.). *Narratives of student engagement in an alternative learning context*. Kalamazoo.

Jones, J. N. (2014). Choice theory and student engagement in an alternative public school. In D. J. Shernoff, & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbook by Teachers College Record.

Kegan, R. (1982). *The evolving self: Problem and process in human development*. Cambridge, MA: Harvard University Press.

Lumby, J. (2011). Enjoyment and learning: Policy and secondary school learners' experience in England. *British Educational Research Journal, 37*, 247–264. doi:10.1080/01411920903540680.

Lumby, J. (n.d.). *Disengaged and disaffected young people; surviving the system*. Southampton.

Montessori, M. (1973). *From childhood to adolescence*. New York: Schocken Books.

Munoz, M. A. (2002). *Alternative schools: Providing a safety net in our high schools to cope with the at-risk student challenge*. Educational Resources Information Center (ERIC), ED 463 365=UD 034 889.

Nakamura, J., & Shernoff, D. J. (2009). *Good mentoring: Fostering excellent practice in higher education*. San Francisco: Jossey-Bass.

National Research Council Institute of Medicine of the National Academies. (2004). *Engaging schools: Fostering high school students' motivation to learn*. Washington, DC: The National Academies Press.

Pintrich, P. R. (2002). The role of metacognitive knowledge in learning, teaching, and assessment. *Theory into Practice, 41*(4), 219–225.

Rathunde, K., & Csikszentmihalyi, M. (2005a). Middle school students' motivation and quality of experience: A comparison of Montessori and traditional school environments. *American Journal of Education, 111*(3), 341–371.

Rathunde, K., & Csikszentmihalyi, M. (2005b). The social context of middle school: Teachers, friends, and activities in Montessori and traditional school environments. *The Elementary School Journal, 106*(1), 59–79.

Rhodes, J. E. (2002). *Stand by me: The risks and rewards of mentoring today's youth*. Cambridge, MA: Harvard University Press.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (Eds.). (2008). *Motivation in education: Theory, research, and applications* (3rd ed.). Upper Saddle River: Merril Prentice Hall.

Schussler, D. L. (2009). Beyond content: How teachers manage classrooms to facilitate intellectual engagement for disengaged students. *Theory into Practice, 48*(2), 114–121.

Shernoff, D. J. (2010). *The experience of student engagement in high school classrooms: Influences and effects on long-term outcomes*. Saarbruken: Lambert Academic Publishing.

Shernoff, D. J., Knauth, S., & Makris, E. (2000). The quality of classroom experiences. In M. Csikszentmihalyi & B. Schneider (Eds.), *Becoming adult: How teenagers prepare for the world of work* (pp. 141–164). New York: Basic Books.

Shernoff, D. J., Csikszentmihalyi, M., Schneider, B., & Shernoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18*(2), 158–176.

Sidorkin, A. (2002). *Learning relations*. New York: Peter Lang.

Smyth, J., & Fasoli, L. (2007). Climbing over the rocks in the road to student engagement and learning in a challenging high school in Australia. *Educational Research, 49*, 273–295. doi:10.1080/00131880701550565.

Steinberg, L. (2010). *Adolescence* (9th ed.). New York: McGraw Hill.

U.S. Department of Education, National Center for Education Statistics. (2002). *Characteristics of the 100 largest public elementary and secondary school districts in the United States: 2000–01 (NCES 2002–351).* Washington, DC.

Urdan, T. C., & Maehr, M. L. (1995). Beyond a two-goal theory of motivation and achievement: A case for social goals. *Review of Educational Research, 65*(3), 213–243.

Urdan, T. C., & Turner, J. C. (2005). Competence motivation in the classroom. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 297–317). New York: Guilford.

Viadero, D. (2007). Social-skills programs found to yield gains in academic subjects. *Education Week, 27*(16), 1.

Wellen, C., & Abbot, W. (2005, Fall). A large, comprehensive public high school heads down the quality school road. *The William T. Glasser Institute Newsletter,* pp. 17–21.

Wilhelm, J. D. (2008). *"You gotta be the book": Teaching engaged and reflective reading with adolescents* (2nd ed.). New York: Teachers College Press.

Willms, J. D. (2003). In J. D. Wilms (Ed.), *Student engagement at school: A sense of belonging and participation: Results from pisa 2000*. Paris: Organisation for Economic Co-operation and Development.

Wubbolding, R. E. (2007). Glasser quality school. *Group Dynamics Theory, Research, and Practice, 11*(4), 253–261.

Chapter 12
Learning from Research on Youth Engagement During Out-of-School Time

Introduction

In the previous two chapters, we discussed several school models with empirical evidence of engaging youth. As compelling as they may be, such models are few and far between. As exceptions to the rule, one may wonder how they shed light on the mainstream public school system. In this chapter, we discuss youth engagement in the growing field of out-of-school time (OST) and research on after-school programs specifically. OST can be revealing because children and adolescents report more involvement, enjoyment, intrinsic motivation, and initiative during sports, arts, games, and other extracurricular and active leisure activities than in any other class of activities, such as productive (e.g., school or paid work), self-maintenance (e.g., cleaning or grooming), or passive leisure (e.g., watching TV) activities (Csikszentmihalyi and Kleiber 1991; Csikszentmihalyi and Larson 1984; Csikszentmihalyi et al. 1993; Larson 2000; Larson and Kleiber 1993). If this finding extends to organized after-school programs, especially school-based ones, then this provides a context for engagement of not just some youth in some schools, but many youth in many schools. While comparing after-school and in-school programs may seem like comparing apples and oranges, the chapter suggests that engagement in learning is fundamentally the same process whether in or out of school. It raises the question as to how distinct the lines between in-school and out-of-school offerings must be and how they may change in the future. This question is increasingly relevant as the growing demand for expanded learning time may force the reengineering of how school time and resources are used, and the rethinking of traditionally academic and nonacademic boundaries.

During after-school time, many students will watch TV, take a nap, or "hang out" with friends. Relaxation and down time may have their place, but these activities rarely stimulate learning and skill development. On the other hand, many students will, on their own accord, opt to play sports or engage in other meaningful activities such as hobbies, music, art, drama, or reading for pleasure. These tend to be high flow activities in which adolescents do challenge themselves and develop skills

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(Csikszentmihalyi and Kleiber 1991; Csikszentmihalyi and Larson 1984), and because they are usually performed voluntarily, these sorts of extracurricular and OST activities offer a window into how children and adolescents naturally learn and grow "on their own terms."

When we do examine after-school contexts in which youth are engaged in activities that foster their own development, many of the same principles of engagement emerge as when examining the whole-school models discussed in Chaps. 10 and 11. In this chapter, we review research revealing that out-of-school time, and structured after-school programs in particular, provides a unique developmental context for fostering engagement and positive youth development. Several ESM studies are then presented that take a deeper look into students' experiences and emotions during after-school programs, investigating which activities and contexts are the most engaging during program time, and whether experiences during programs predict social competencies and academic outcomes. Also discussed are opportunities for community service and civic engagement, as these experiences are frequently found to be highly engaging and rewarding, and fulfill Einstein's educational ideal in terms of the training of individuals who find their highest life problem in service to the community (see Chap. 2). Research on these and other after-school experiences is beginning to answer the question of what types of programs provide high quality experiences for youth, such as those which provide a context for student belongingness and mattering to the community.

Research on Out-of-School Time

In the past 10–15 years, research on out-of-school time and after-school programs has proliferated greatly. A first step was figuring out if extracurricular and OST activities were beneficial for youth. With great consistency, most of all this research showed that extracurricular activities like sports, the arts, community involvements, and special-interest academic pursuits help children and adolescents to negotiate salient developmental tasks, such as maintaining physical and psychological health, forming a positive orientation towards school and the world, and getting along with others (Barber et al. 2001; Gerber 1996; Jordan and Nettles 2000; Mahoney et al. 2005a; Marsh 1992). Studies have also showed that these activities were unique contexts developmentally, primarily due to the high quality of engagement youth experienced in them (Larson 2000). During extracurricular and other OST activities, research has found that students encounter an opportunity for learning and practicing skills in enjoyable and voluntary activities (Bronfenbrenner 1979; Eccles et al. 2003; Larson and Verma 1999; Mahoney and Cairns 1997). Perhaps not surprisingly, participation in extracurricular activities is associated with positive social and emotional adjustment, as evidenced by signs of enhanced self-esteem, self-confidence, perseverance, emotion regulation, and more positive outlooks for the future (Barber et al. 2001; Dotterer et al. 2007; Eccles and Barber 1999; Holland and Andre 1987; Jordan and Nettles 2000; Larson et al. 2006; Mahoney and Stattin

2000; Posner and Vandell 1999). Because extracurricular activities frequently involve other competent peers and adults, children also develop increased social skills and sense of belongingness in a personally valued group (Broh 2002; Brown and Evans 2002; Fredricks et al. 2002).

Other research focused on after-school *programs* more specifically. Such programs include a wide array of school- or community-based athletic, artistic, and academic activities including mentoring, community service, school-to-work transition, and recreational programs and services. Both private and public organizations offering youth programs range from large national agencies such as 4-H, the Boys and Girls Club, and Boy/Girl Scouts to local youth sports organizations, museums, arts centers, service clubs, and numerous other grassroots organizations (Eccles and Gootman 2002).

After-school programming in the United States has been steadily increasing, and interest in them is at an all-time high. According to estimates, 6.5 million children and adolescents are enrolled in after-school programs, which includes approximately 23 % of K-5 children (Carver and Ikura 2006). It is also estimated that the federal government invested up to $3.6 billion in them since 2002 (Afterschool Alliance 2004). This may have been the policy response to a broad mandate for after-school programming. In 2001, 94 % of voters polled stated that they believed there was a need for a safe place children could go to learn in the after-school hours. The entry of more and more women into the workforce has changed the landscape of American families, as 80 % of students now have working mothers. Although policymakers are beginning to address the supervision needs of children and adults during after-school hours, this response has not kept pace with the demand.

Traditionally, a primary purpose of after-school programs was to provide safety and supervision to children while parents work (Pierce et al. 2010). With a few exceptions (Mahoney et al. 2001; Vandell and Corasaniti 1988), research has quite consistently corroborated that school programs are a safe environment promoting with adult supervision (see Bohnert et al. 2010 for a recent review). Time spent without adults in after-school hours is associated with higher rates of misconduct and substance use, especially when with other unsupervised peers (Jordan and Nettles 2000; McHale et al. 2001). However, studies have shown that participation in school-based after-school programs and extracurricular activities can reduce antisocial and aggressive behaviors, substance use, and psychological problems like depression (e.g., Mahoney 2000; Mahoney et al. 2002; Vandell et al. 2009). Moreover, research also suggests that programs are unique environments for fostering high levels of students motivation and engagement (Eccles and Gootman 2002; Larson et al. 2005; McLaughlin and Irby 1994; Posner and Vandell 1994), helping them to build talents and efficacy (Larson 2000), and supporting their social skills and relationships with peers and adults (Barber et al. 2005; Eccles and Gootman 2002; Hansen et al. 2003; Mahoney et al. 2002; Posner and Vandell 1994; Rhodes and Spencer 2005; Vandell et al. 2009). Youth attending 4-H and other after-school programs at least twice per month report more favorably on measures of positive youth development and greater investment in civic engagement and community service than students who do not attend such programs (Lerner 2004; Lerner et al. 2008a, b; Li et al. 2010).

In response to governmental and philanthropic initiatives, the role of after-school programs has expanded to include targeting low-income youth in order to improve academic achievement and narrow the achievement gap (Pierce et al. 2010). Research has indeed linked participation in after-school programs and extracurricular activities to improved academic achievement as well as psychosocial competencies (Darling 2005; Durlak and Weissberg 2007; Durlak et al. 2010; Eccles et al. 2003; Eccles and Gootman 2002; Fredricks and Eccles 2006b; Mahoney et al. 2005c, 2007; Pierce et al. 2010; Posner and Vandell 1994). While some of the research with respect to academic achievement has been mixed, studies finding no or little effect on achievement (e.g., James-Burdumy et al. 2007) have been criticized as methodologically flawed (Mahoney et al. 2005b), and discrepant findings are frequently explained by differences in quality among programs (Pierce et al. 2010; Vandell et al. 2005a, 2009). Other studies have found that children attending after-school programs or other organized activities earn higher grades and achievement test scores than nonparticipants (e.g., Cooper et al. 1999; Darling 2005; Fredricks and Eccles 2006b). Most convincingly, a meta-analysis including studies of outcomes associated with 73 after-school programs concluded that students attending after-school programs achieved higher grades and test scores than nonparticipants (Durlak and Weissberg 2007).

One of the primary reasons that after-school programs are believed to enhance academic achievement centers on school attachment or engagement. The development of specific competencies, interests, strengths, and friendships with peers sharing the same passions can provide a foundation for affirming identity and continuing motivation in chosen pursuits (Barber et al. 2001, 2005; Fredricks et al. 2002; Haggard and Williams 1992; McIntosh et al. 2005; Shernoff and Hoogstra 2001; Youniss and Yates 1997). As participation in activities and emergent identities expand, and particularly to the extent they are school-relevant or aligned with academic goals, achievement motivation may be enhanced and children can become more identified with school (Dotterer et al. 2007; Finn 1989; Finn and Rock 1997; Marsh 1992). In addition, as youth work with adults and school staff, and relationships with them improve, they may feel to be a more important part of the school and develop a sense of teamwork in addition to metacognitive competencies such as planning and strategizing (Larson et al. 2005). Not only are after-school programs found to be beneficial, but after-school research has also converged on findings demonstrating that breadth (i.e., number of activities), intensity (i.e., frequency of participation), duration of participation, and engagement during activities all contribute towards more positive experiences and beneficial student outcomes (Bohnert et al. 2010).

Despite widespread agreement on many benefits associated with after-school programs, there is less certainty about what it is about them that is beneficial. Most previous studies have treated after-school programs like a black box, neglecting the particular activities and programmatic features in which students gain positive experiences and competencies. Since academic and developmental gains made in OST contexts may be fueled by engagement, and extracurricular activities have been found to be optimal context for stimulating engagement, it made sense to focus

on engagement in our own research studies. ESM studies combined with observational research have been particularly helpful in identifying specific activities and programmatic features in which students were most engaged and had positive learning experiences, providing fresh insights into conditions enhancing the engagement of youth in schools more generally.

Investigating Engagement During Out-of-School Time

In our research focused on school-based after-school programs (e.g., Shernoff 2010; Shernoff and Vandell 2007; Vandell et al. 2005b), we wanted to know how students spent their time, and to what extent they experienced different motivational and emotional states like engagement when they were at an after-school program compared to when they were elsewhere. We also wanted to know how engaging the experiences of students attending after-school programs were, compared to those of students who did not. After obtaining a general picture of the influence of after-school programs on the motivational and emotional states of participants, we looked more deeply inside the programs themselves, identifying which activities and social arrangements were the most frequently reported and the most engaging. We also conducted a follow-up study to determine the extent to which engagement in programs mediated positive psychosocial and academic outcomes. Again, engagement was conceptualized as experientially rooted in a state of flow, and it was measured as a combination of concentration, enjoyment, and interest in the activity at hand.

The Studies

We collected data from eight after-school programs in two medium-sized cities and one small town in three Midwestern states (Shernoff and Vandell 2008; Vandell et al. 2005b). All of the programs were based on middle schools. Studying emotions and engagement during the after-school hours presents several challenges. Because activities take place in multiple locations, systematic observation is difficult. Teenagers also spend considerable amounts of time alone and unsupervised during the nonschool hours, engaging in behaviors that may be strongly influenced by an observer. To address these challenges, we again used the Experience Sampling Method (ESM; see Chap. 4), which allowed us to assess levels of engagement and different mood states of the students as after-school activities were taking place (see Chap. 3 regarding how ESM studies are conducted).

Our sample consisted of 191 middle school youth: 52 % were male, 60 % were children of color, and 47 % reported an annual household income of less than $40,000. Of these, 160 were *program youth* who reported participating in an after-school program at least once during the study, and 31 were *nonprogram youth* who did not participate in any organized program. In our studies, all 191 young people

wore watches that were programmed to beep 35 times during 1 week in the fall and 35 times during 1 week in the spring during the 2001–2002 school year. Signals occurred at random times after school and during evenings and weekends. The youth responded, on average, to 33 of the 35 signals in both the fall and the spring, for a total of 12,143 reports.

Engagement in After-School Programs Versus Elsewhere After School

We made two sets of comparisons: the first comparing the experience of program students when at after-school programs their experiences when they were elsewhere after school; and the second comparing the experience of program youth when elsewhere and the experience of nonprogram youth after school. "Elsewhere" typically referred to the respondent's home, someone else's home, an outdoor space, or a public building. If program youth used their time differently and experienced different emotional states when they were elsewhere after school compared to nonprogram youth, it would suggest that young people who attend programs may differ in fundamental ways from those who do not. If program youth did not use their time differently or experience different emotional states, the differences reported when program youth were at the program compared to when they were elsewhere would most likely be explained by the program context and not the predispositions of participants (Shernoff and Vandell 2008; Vandell et al. 2005b). Adolescents tend to report either high intrinsic motivation (i.e., during leisure activities) or high concentrated effort (i.e., during academic activities). Because positive youth development and *meaningful engagement* are facilitated by youth experiencing both at the same time (Larson 2000), we were particularly interested to know if both factors would be higher during after-school programs.

With respect to the first comparison, we found that there were significant differences in the use of time and the quality of experience when students were at the programs compared to when they were elsewhere after school. While attending after-school programs, program youth reported spending a higher percentage of time in organized sports, academic and arts enrichment activities, and completing homework than when they were elsewhere. Specifically, when in programs students reported participating in organized sports 32 % of the time, followed by arts enrichment activities (12 %), socializing (11 %), completing homework (8 %), academic enrichment activities (5 %), and sit-down games (4 %) (Shernoff and Vandell 2008; Vandell et al. 2005b). Students in other settings reported spending a good deal of time watching TV and eating or snacking after school. Students in programs rarely reported engaging in these activities. Students in other settings also reported being alone or in "self-care" a substantial percentage of the time. Not once did a student report being alone when at a program.

Moreover, students reported significantly higher intrinsic motivation, concentrated effort, and positive states of mind while they were in after-school programs

than when they were elsewhere after school. They also experienced their activities to be more important when they were at programs than when they were elsewhere (Shernoff and Vandell 2008; Vandell et al. 2005b). These findings were also corroborated by Li et al.'s (2009) study finding an association between program participation and a variety of measures of Positive Youth Development including emotional engagement with school.

With respect to the second comparison, we found that program youth engaged in activities at similar rates and had similar emotional states when elsewhere after school as did nonprogram youth when after school. Nonprogram youth spent 9 % of after-school hours playing sports, 10 % of their time completing homework, and 19 % of their time watching TV after school, percentages that were not significantly different than those of program youth when not at programs. The subjective experiences of both groups were also similar: This profile of activities left youth feeling apathetic and disengaged. This strongly supports the inference that the after-school programs—and not personal qualities or self-selection on the part of after-school participants—was the reason that program youth were involved in more positive and developmentally beneficial experiences after school than were nonprogram youth (Shernoff and Vandell 2008; Vandell et al. 2005b).

From these analyses, we concluded that school-based after-school programs provide youth with substantially different activities than they would otherwise be exposed to during after-school hours. While at programs, youth spent more time engaged in productive, skill-building activities that are both challenging and intrinsically motivating, the defining features of flow. When they were not at a program, they spent more time in passive and indulgent activities. Because students reported higher levels of challenge, concentration, and effort concurrent with heightened enjoyment and intrinsic motivation, we were especially struck that participants were overall more *meaningfully engaged* during after-school programs than when elsewhere (Shernoff and Vandell 2008; Vandell et al. 2005b). In addition, youth were physically active in over one-third of their experiences sampled during program time; and when they were not at a program, they were much more likely to be watching TV and snacking. This suggests that after-school programs may help prevent declines in physical activity and sports participation as youth grow older, serving as a protective factor against increasing obesity and other weight issues among US children and adolescents (National Center for Health Statistics 2005).

Given the higher engagement and quality of experience in after-school programs, we next wanted to know in what activities and social arrangements students were the *most* engaged while in after-school programs (Shernoff and Vandell 2007, 2008). Students' engagement was compared in the six most frequently reported after-school activities: sports, arts enrichment activities, socializing, homework, academic enrichment activities, and sit-down games. We found that engagement was highest during organized sports and arts enrichment activities, activities participants both enjoyed but also found it important compared to other program activities. Thus, both sports and arts enrichment activities elicited the rare combination of high intrinsic motivation and high levels of concentration that characterizes meaningful engagement and flow so critical for positive youth development (Larson 2000). By

engaging in activities that elicit both playfulness and seriousness, students experienced the deep concentration and intrinsic reward characteristic of efficient learning and continuing motivation. Sports were engaging to students because they find the activity not only subjectively important, but also challenging: They are driven to play to the fullest extent of their skills and concentration. Arts enrichment activities are engaging because they facilitate spontaneity, creativity, and social unity (Burton et al. 2000; Folkestad 2002). In contrast to academic classes and after-school "homework help sessions," in which engagement is low, or art classes offered in school, which are perceived to be enjoyable but not important or challenging, academic and arts enrichment opportunities in the academic setting appear to more effectively challenge and engage students because the topics are frequently more relevant to the lives of youth, the work is more project-based and collaborative, and natural curiosity is less impeded by the prospects of tests and failure.

Students reported high levels of positive affect not only during arts enrichment activities, but also during academic enrichment activities and sit-down games. Academic enrichment refers to supervised activities such as hands-on science projects, discovery units, and computer education, activities that take place almost exclusively in structured after-school programs (Vandell et al. 2005b). During academic enrichment activities, students reported both higher positive affect and lower negative affect than when they were engaged in other activities. In sharp contrast, participants reported the lowest intrinsic motivation, positive affect, and overall engagement during homework completion sessions. When students were working on homework, they reported perceptions of low autonomy were subject to the constraints of evaluation associated with their academic classes despite being physically in an after-school program, while the choice and feedback offered by other program activities were absent. However, their affective response was enhanced when academic work was approached as a group activity with frequent feedback that allowed students to demonstrate their skills and initiative. Unlike working on homework which is generally a solitary activity, academic enrichment activities are often project-based, relevant to students' experiences, and interactive with peers and adults, distributing leadership and initiative more evenly (Shernoff and Vandell 2007, 2008).

Additionally, we compared subjective experience across the most common social arrangements in the after-school programs. The most frequently reported social partners were peers and adults (53 % of the time), followed by adults only (37 %). Only 4 % of the time did program youth report that they were with peers only. Students reported higher apathy and lower importance when they were with adults only than with peers only. However, students reported being the most engaged and intrinsically motivated when they were with *both* peers *and* adults. This suggests that adult supervision and involvement combined with peer interaction may be an essential characteristic of activities that are both motivating and meaningful. In fact, the predominantly supervised and interactive structure of after-school programs may help to explain why students reported significantly more positive experiences when they are at programs than when they are elsewhere (Shernoff and Vandell 2007, 2008).

Does Engagement Mediate Improved Social Competence and Academic Performance?

Because research has shown that participation in after-school programs supports the development of social competence (Durlak and Weissberg 2007; Fredricks and Eccles 2006a, b; Larson and Brown 2007) and academic achievement (Darling 2005; Durlak and Weissberg 2007; Fredricks and Eccles 2006b; Mahoney et al. 2005c), and our studies as well as others (e.g., Avika 2011; Grossman et al. 2007) have shown that adolescents report heightened engagement and quality of experience in programs, engagement is often assumed to mediate positive academic and psychosocial outcomes associated with participation in after-school programs. Few studies, however, have explicitly examined whether engagement and related experiential factors in after-school programs help to account for such outcomes. Identifying mediators helps us to understand the socio emotional processes involved in linking after-school program participation to outcomes aside from potential confounds (e.g., demographic variables) plaguing much outcomes research (Larson 2000). Therefore, a follow-up study (Shernoff 2010) examined how middle school students' experiences and perceptions in after-school programs are related to social competency and academic performance, testing the possibility of these experiences may play a mediational role. Academic performance was measured by math and English grades during the year of program participation, and survey measures of social competency included scales for goal setting and planning, conflict resolution, nonconformity, teamwork, and perspective taking. In addition, the follow-up study accounted for the effects of demographic factors as well as baseline measures of the outcome, which are not frequently accounted for in studies of out-of-school time.

The follow-up study indeed found that enhanced engagement during after-school programs was a mediating variable leading to positive developmental outcomes like social competency (Shernoff 2010). In other words, engagement and flow experienced during after-school programs predicted social competence, and this effect accounted for a significant portion of the positive association between program participation and social competence. This finding is consistent with Larson and colleagues' (Dworkin et al. 2003; Hansen et al. 2003; Larson 2000) conception of positive youth development: When youth combine concentrated focus with positive emotions in the task at hand, a combination represented in the engagement and flow constructs, conditions are optimal for developing social competencies such as teamwork and conflict resolution. These conditions are reported most frequently in structured, voluntary programs such as school-based after-school programs.[1]

[1]These results were significant after controlling for background characteristics, but not after controlling for the baseline measure of social competency, meaning that while flow and engagement mediated differences in social competency, it did not mediate significant improvement in social competency over the course of the academic year studied. In addition, no such mediational role was found with respect to differences in academic performance.

However, results also suggested that relative perceptions of environmental challenge and meaningfulness during after-school programs may be especially related to gains in academic achievement. Engagement in programs (relative to elsewhere after school) predicted higher English and math grades after controlling for background characteristics. Higher levels of challenge and importance in programs in particular predicted both higher English and math grades after controlling for background and baseline characteristics. Thus, students who were more engaged in an after-school program compared to alternative out-of-school environments earned higher end-of-year grades in math and English, and students who perceived program activities as relatively important and challenging improved in those subjects over the course of only 1 year. This finding supports perspectives of situational challenge and relevance as integral to flow-producing, authentic engagement and achievement (Csikszentmihalyi 1990; Newmann 1992).

Because the follow-up study found no effect of the amount of time students were in programs (i.e., dosage/intensity) on students' engagement or on positive outcomes, overall results suggest that the relative *quality* of experience in programs may be a stronger predictor of positive outcomes like academic performance than the *quantity* of experience in programs. This proposition is further supported by McGuire and Gamble's (2006) study finding that psychological engagement, but not hours spent, in a community with a service activity accounted for variability in participant's sense of community belonging and social responsibility. Perhaps not surprisingly, students who valued and cared about the activity benefitted the most from it, but this was not always correlated with the amount of time one "puts in." This is not to argue that intensity and dosage do not have effects on outcomes, especially over a longer period of time, but rather that in our data, relative challenge, importance, and engagement with activities was a more powerful predictor of positive developmental and academic outcomes than how much time was spent in after-school programs.

Emphasizing Engagement in After-School Programs

These findings illustrate that after-school programs can offer adolescents positive and engaging experiences, which, in turn, support their social, emotional, and cognitive development. Our findings suggest that the experiential pathway to such outcomes is peak engagement and flow in a diverse array of voluntary and structured activities—and indeed demonstrate that engagement and flow mediate the pathway to social competence in particular. The fact that students reported feeling high levels of engagement in structured after-school activities is particularly important in comparison to their lack of engagement in school or in unstructured activities outside of school (Csikszentmihalyi and Larson 1984). By offering a rich array of activities that promote engagement, after-school programs can enable youth to experience flow. After-school programs thereby provide young people with a new way of relating to the world: an orientation of being open to new experiences, of being

interested in the world, of being deeply involved with activities and people, and, ultimately, of becoming lifelong learners. Rather than stopping with the immediate experience of a satisfying activity, this orientation carries into the future.

In addition to enhancing engagement in activities offered in school-based after-school programs, studies also show that after-school programs can promote engagement in goals directed outside of schools to benefit the community—for example, working towards policies safeguarding social justice. The ways in which after-school programs have modeled enthusiasm for community service and civic engagement are discussed next.

Engaging Youth in Community Service

Developing a coherent sense of who one is and how are fits into a particular culture is a chief developmental task of adolescents (Erikson 1968). Youth participation in solving social problems, especially when encouraged by adults who communicate coherent, supporting ideologies, can stimulate political and moral reflection and contribute positively to ongoing identity development (Youniss and Yates 1997). In Youniss and Yates' (1997) classic study of youth community service, students needed to volunteer at a soup kitchen at least four times during a service-learning course. They were encouraged to volunteer for additional days over school holidays if they wished. They found that 50 % of the students volunteered more than 4 days, with 7 % going seven or more times (Youniss and Yates 1997).

The community service model was centered around a service-learning course in social justice at St. Francis High School, a nonelite parochial school in Washington, DC, with a student population of approximately 600. It was the third course in a required, four-course sequence in religion. There were six sections of 20–30 students, each meeting for 50 minutes, 5 days per week. Social issues covered in class included homelessness, poverty among families and children, exploitation of immigrant laborers, urban violence, capital punishment, AIDs, racism, and homophobia. In addition, individuals such as Martin Luther King Jr., Dorothy Day, Archbishop Oscar Romero, Cesar Chavez, and Mitch Snyder were studied as moral exemplars who devoted their lives to just causes (Youniss and Yates 1997), which is especially significant since research suggests that moral exemplars, mentors, parents, and other role models are particularly potent influences on motives towards service and caring for others (Fichman et al. 2001). Students were implored to think deeply about events and injustices going on around them. For example, students were asked to consider whether their actions moved the evolution of humanity forward or backwards. Students were likely empowered as the power of individual gestures was stressed. At Christmas, students were asked to perform random acts of kindness. They were praised for doing something thoughtful but unexpected for others such as giving homemade lasagna to homeless people, painting a living room for a family member, or filling up an expiring parking meter for a stranger.

For the service component, four or five juniors worked at a local soup kitchen from 8 a.m. to 12:30 p.m. each weekday. While there, they prepared and served a meal for 300–400 people and helped clean up. Occasionally students talked and interacted with patrons of the soup kitchen. After each day of work at the soup kitchen, students were asked to write thoughtful essays on their day of service and the people they met. There were also discussion groups held after each of the quarterly visits. Expressions of students' emotional engagement with the experience were evidenced in both their writings and discussions. In their essays, students frequently interjected their chronological accounts of the day's events with strong emotional judgments or expressions. The most common sentiments were sadness, anger, and feeling good about helping. Sadness and feeling good about helping were found in approximately one quarter of all of the students' essays, and feelings of anger were expressed in approximately 10 %. Clearly, homelessness became an issue of personal importance for many of the youth, not just an issue for the government to consider, but also for everyone in the community (Youniss and Yates 1997).

The experience aroused some students' morals and political awareness, and steered their identity to productive directions. From a moral perspective, students expressed compassion for others, an awareness of interconnectivity, and a hope for justice in society. Students were emboldened to imagine a society without homelessness and where those less fortunate would receive respect and fair treatment. Data from the study supported the view that the younger generation needs these sorts of ideals for causes beyond themselves to form ideologies that fuel identity development (Erikson 1968, 1980). Of those who did volunteer during high school, 68 % volunteered after high school, compared to 29 % among those who did not volunteer during high school (Youniss and Yates 1997). Data from the study also suggested that the inclination towards community service is at least partially socially constructed or mediated: Individuals were significantly more likely to do volunteer service who had family or friends doing likewise. Identity was strengthened in two ways: through moral-political awareness and through social relatedness (McIntosh et al. 2005). Testifying to the indelible impression of experiential or service forms of learning, one alumnus reflected 6 years later: "I do not know what a preposition is. I do not remember who the eighth President of the United States was. I do not remember how to find the angle of an obtuse triangle…What I remember is [watching on the television monitor in class] the image of an old trembling woman, standing at her doorway with one hand cupped, with the other hand making an upward motion to her mouth. She is too embarrassed by the television camera to ask the volunteer worker to bring food next time, so she makes the motion. Was a lasting impact made upon me? I do not pass a homeless person without emptying my pockets…" (Youniss and Yates 1997, pp. 133–34).

Students' testimonies also suggest that the emotional engagement of the experience leads to cognitive engagement and increased knowledge. Some stated that because they care more about the issues, they also want to know more, be informed, and think critically in order to know how to respond to situations that arise (Youniss and Yates 1997, p. 151). In Chap. 2, we discuss educational philosophy and

particularly Einstein's "$E=MC^2$ of education," which asserts that "the aim of education must be the training of independently acting and thinking individuals, who, however see in the service of the community their highest life problem" (Einstein 1954, p. 60). Einstein also famously declared, "The true value of a human being is determined primarily by the measure and the sense in which he has attained liberation from the self." In keeping with these ideals, serving homeless persons helped young individuals to move beyond and attain liberation from their momentary selves. Students were led to think imaginatively about social problems and their solutions for which, they came to realize, they and the rest of society bear responsibility (Youniss and Yates 1997).

In Youniss and Yates' (1997) study, evidence of engagement is derived through qualitative data as opposed to the ESM. More recently, however, Kackar (2011) examined variations in adolescents' momentary feelings of autonomy, competence, and relatedness during a community service project, and how these experiences affected their reasons and intentions to continue doing community service in the future. Data were collected from 51 high school students who participated an 8-day service trip (a capstone experience of a yearlong service project) in which they provided extensive home repair and construction for underprivileged families in a mountainous region of the Midwestern United States. For a year leading up to the trip, participants engaged in service activities such as small neighborhood service projects, monthly meetings, fundraising activities, and reflective activities in order to build sensitivity and develop cultural appreciation for those being served. While the construction services were the primary focus of the service trip, the trip included a strong social dimension since participants were intended to build positive relationships with their fellow crewmates and the families they were serving. Participants' quality of experience was analyzed while in both home repair and relationship-building activities (Kackar 2011).

Results showed that participants experienced benefits in terms of experiences characterized by autonomy, competence, and relatedness. Perceptions of autonomy were especially high during their service-related social interactions. Moreover, those who perceived higher levels of competence and relatedness on the service trip were more likely to have an intrinsically motivated orientation toward future service work after controlling for background characteristics and whether or not the service work was perceived to be voluntary. Sixty-one percent of the participants stated that they were "extremely" likely to engage in service in the future, while the remaining 39 % expressed moderate to no likelihood of doing future service (Kackar 2011). Overall, the findings suggest community service can support the basic human needs of autonomy, competency, and relatedness, and when it does, participants are supported to internalize values associated with service to the extent that it may become internalized, self-regulated, and continue into the future (Kackar 2011). Overall, the finding corroborates many of those found by the soup kitchen study by Youniss and Yates (1997), strongly suggesting that exposure, social interaction, and guidance around service work in the years of adolescence and emerging adulthood are frequently enough to instill continuing motivation for voluntary service work in the future.

Fostering Civic Engagement

Social scientists have estimated that there has never been a time in American history when so few young people sought involvement in governmental or civic organizations (Damon 2008). In general, youth today do not trust politicians, do not see the relevance of politics in their lives, and are skeptical that they could accomplish anything of value in the political realm. In the 2006 National Assessment of Education Progress, only a third of students scored above proficiency in civics, less than a third could identify the historical purpose of the Declaration of Independence, and less than a fifth could explain how participation as a citizen helps a democracy (Hamilton 2009). When offered courses and/or the opportunity to participate in civic life, however, students do gain knowledge of how democracy really works. Thus, some have called for policies giving civic education and community service the same status as other subjects in the curriculum, with challenging, stimulating, and rigorous curricula (Kerr and Cleaver 2009; Noddings 2003). There are even fewer opportunities for civic engagement among the less privileged compared to more privileged students, a factor thought to contribute to socioeconomic and political inequality (Kahne and Middaugh 2009).

While the current era is often characterized by a culture of antipathy towards politics and infatuation with consumerism, productive strategies to civically engage youth are based on the premise that the recent generation of youth are not deficient in moral character, but rather are ready to take advantage of participation (Levine and Youniss 2009). Supporting this view, there has been a rise in volunteerism among adolescents since the 1970s (Levine and Youniss 2009). The recent Occupy Wall Street movement in the United States certainly testifies to a renewal of civic engagement for social justice issues among today's youth; and the extent of societal alienation expressed in the movement is likely a sign of the significant shortcomings of civic and community education for adolescents in the public school system to date. When focusing on the strengths and potentialities of youth rather than their deficits, those who have worked closely with today's youth have witnessed them join civic action activities with enthusiasm and sincerity.

While it is commonly recognized that the nourishing soil of the community is necessary for the development and well-being of the individual, perhaps less recognized is the reciprocal principle, that the personal and social development of the individual are essential for the strengthening of the community. Strikingly, Lerner (2004) suggests that this fundamental, reciprocal relationship may be best characterized as engagement itself: "When youth participation reflects the adaptive individual ↔ context relations indicative of thriving and predicated on the synthesis of moral and civic identity within a young person, it may be characterized as civic engagement" (p. 132).

Focusing on Quality in After-School Programs: What Is It?

Evidence continues to mount that after-school centers and programs can hold a unique key for unlocking the leadership, empowerment, and initiative of youth (Eccles et al. 1993a; Larson 2000; Speer 2008), but there is significant variation among programs in terms of their effects on youth. After-school researchers have therefore begun to ask: What specific elements of programming constitutes "quality" (Cross et al. 2010; Hirsch et al. 2010, 2011; Larson and Walker 2010; Pierce et al. 2010; Sheldon et al. 2010; Smith et al. 2010; Yohalem and Wilson-Ahlstrom 2010)? A foundational framework was provided by The Committee on Community-Level Programs for Youth in a research project of the National Research Council (NRC) and the Institute of Medicine (IOM) (Eccles and Gootman 2002). Among other characteristics, the committee found that positive youth development was promoted by after-school and other youth programs providing opportunities to form close, durable, and supportive relationships offering emotional and moral support. Such programs also provide opportunities for belonging and being valued. This point cannot be emphasized enough. One of the first things an adolescent decides when walking through the door, and in deciding whether or not to walk through the exit door, is, "Do I fit in here, do I feel comfortable?" Perhaps nothing is more crucial to one's overall quality of experience than their feelings of comfortability about where one is, typically a function of whom one is with. This is seemingly a neglected consideration in many academic classes. Indeed, opportunities to belong are not only associated with positive outcomes, but also a lower likelihood of dropping out (Eccles et al. 1998; Goodenow 1992, 1993; Roderick 1993). Developmentally supportive programs also provide opportunities to contribute to one's community, developing a sense of mattering.

However, a simpler answer to what makes for a high quality after-school program is those that engage youth. Studies are beginning to draw the explicit connection between quality after-school programs and engagement. For example, Mahoney et al. (2007) found that higher quality after-school programs in terms of structure, organization, social climate, and opportunities for cognitive growth predicted engagement. One useful model of an approach to civic engagement emphasizing youth development is the People Improving Communities through Organizing (PICO) National Network, a nationwide federation of community organizing groups (Speer 2008). PICO uses a congregation-based model of organizing; it is not a religious organization but draws on religious congregations of various faiths as their base for integrating and working with community members. Because it recognizes the importance of relationships and interconnectedness, connections are formed through one-to-one conversations. Forming connections thus becomes about listening carefully to the stories of others as they share their and their family's experiences. Only by trying to comprehend stories about, for example, lack of affordable medicine, or the business challenges faced by immigrants, or lack of capital for home purchases, do participants in the organizing process begin to understand the impact of such issues on the real lives of community members. By focusing on people and the pain they experience, individuals in the community become

connected through common emotions and qualities of struggle, fear, and hope (Speer 2008).

PICO perpetually develops new leaders through its "opportunity role structure," creating many distinct roles that individuals must fill in the organizing process (Maton and Salem 1995). Therefore, there are numerous, distinct roles for individuals to perform, such as chairperson for meetings, interviewer of a public official, scheduler, and planner of events. Because exposure to multiple roles enhances the learning process and maintains openness to the culture of the organization, organizers work to assure that individuals obtain experience in multiple roles. In doing so, PICO draws on the talents and efforts of numerous participants rather than relying on single individuals, adding to the short-term efficacy of its members and long-term viability of the organization. This guards against the all-to-easy tendency for organizing efforts to dissolve into staff-directed projects. It is important that youth organizing is youth-led rather than adult-led. Youth are hired by PICO to be youth organizers and leaders. These youth staff are trained by adult staff, but having youth work directly with youth has proven to be an effective model for engagement within the PICO organization (Speer 2008). Importantly, the youth staff do all of the actual organizing, such as conducting trainings and facilitating meetings. Rather than using direct instruction, the organization raises questions and asks youth to reflect on their experiences (Speer 2008). Undoubtedly, the emphasis on providing each participant with a unique role appeared to be key in facilitating youth engagement.

One exemplar PICO organization is Metro Organizations for People (MOP) in Denver, Colorado, which has been active in youth organizing since 2005. MOP has five youth organizations: four in schools and one in a community center. The youth organizing effort identified an issue that surfaced in their one-to-one conversations: the inadequacy of school bathrooms, which were often lacking in toilet paper and soap. Their work culminated in an all-school assembly in which they presented their data regarding budget cuts and the conditions of the bathroom to the assistant superintendent. Not only did the conditions of the bathroom improve, but the assembly facilitated a renewed interest and energy in youth organizing throughout the school. Since that time, the students in that high school and the other youth organizing groups of MOP have taken on larger issues such as access to college for low-income students. The students held 25 research-based meetings with state legislators, the attorney general, lobbyists, and other civic leaders (Speer 2008). Another PICO group in a low-income immigrant community with a 60 % high school dropout rate successfully campaigned to win an after-school youth center with computer labs and recreational opportunities, with $500,000 used to improve an athletic field for youth. Apparently, this precocious group of youth organizers understood the centrality of youth engagement opportunities in OST for ameliorating pervasive disengagement and school dropout.

Conclusion

Policymakers frequently regard extracurricular activities and after-school programming as superfluous, if not a distraction. In times of fiscal constraint, such programs are often the first to be cut. Therefore, policymakers must learn that organized sports and enrichment programs can enhance learning, promote interest in school, and build necessary skills. Some of the most valued outcomes of sports, arts, and other enrichment activities are immediate sensations of appreciation, joy, interest, deep concentration, and overall engagement. Activities that facilitate flow help young people develop the character and skills they need to meet their life goals. Thus, engagement is not a means to an end, but rather an end in itself, one whose value as a school outcome is as worthy of consideration as any other.

By offering a diversity of engaging activities in which participants interact with peers and adults in a safe and supportive environment rich for relationship building and the development of psychosocial competencies, quality after-school programs can qualify as optimal learning environments for youth. In high quality programs, youth experience enjoyment and positive emotions while being challenged to develop skills important for the future. In fact, research shows that students report that they have more learning opportunities in organized youth activities than almost any other context, including academic classes and unstructured time with their friends (Hansen et al. 2003). Recent research finding a relationship between frequency of attendance in 21st Century Community Learning Centers program and improved study/work habits and school connectedness (i.e., Hoxie and DeBellis 2012) are highly suggestive that time in school-based after-school programs translates into greater engagement with school.

As motivational environments, after-school programs are quite different than classrooms. When participating in after-school programs, students are generally oriented toward the tasks they are undertaking and share an openness towards collaborating with peers and adults. The high level of engagement reported in organized after-school programs is particularly significant in light of the pervasive lack of engagement in classrooms and unstructured activities outside of school. Because most in-school academic programming is highly focused on individual achievement, schools frequently do not provide what adolescents need for their development (Eccles et al. 1993b). It is interesting to consider that school-based programs occur in the same place as classrooms—schools—and often with overlapping students and staff. How can it be that one context provides a peak in students' engagement compared to daily alternatives, while the other—the place students are supposed come together to learn—provides the trough? Regardless of the answer, one implication is that engagement inside and outside of classrooms need not be conceptualized and approached as completely separate entities. Many educators would like students to experience a similar quality of engagement in academic tasks or classroom activities that are frequently reported in after-school programs, and this may be achieved by understanding and applying similar conditions that create the engagement after school.

If an end goal of education is not only academic achievement narrowly defined, but also the development of identity, self-determination, good work habits, social spirit, collaboration, emotional adjustment, communication skills, technological schools, literacy in a variety of media, and other capacities and dispositions needed to be a well-rounded and productive individual in the twenty-first century, then students need opportunities to develop and apply them in real life contexts (Pittman et al. 2004). Presently, realizing this goal—one close to Einstein's educational ideal that individuals emerge from schools as "harmonious personalities" rather than only specialists (see Chap. 2)—is well demonstrated by well-designed after-school or community programs supporting positive youth development (Lerner 2004).

References

Afterschool Alliance. (2004). *America after 3 pm: A household survey on afterschool in America*. Washington, DC: Afterschool Alliance.

Avika, T. (2011, April). *Staff instructional practices, youth engagement, and belonging in out-of-school time programs.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Barber, B. L., Eccles, J. S., & Stone, M. R. (2001). Whatever happened to the jock, the brain, and the princess? Young adult pathways linked to adolescent activity involvement and social identity. *Journal of Adolescent Research, 16*(5), 429–455.

Barber, B. L., Stone, M. R., Hunt, J. E., & Eccles, J. S. (2005). Benefits of activity participation: The roles of identity affirmation and peer group norm sharing. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Extracurricular activities, after-school and community programs* (pp. 185–210). Mahwah: Erlbaum.

Bohnert, A., Fredricks, J., & Randall, E. (2010). Capturing unique dimensions of youth organized activity involvement: Theoretical and methodological considerations. *Review of Educational Research, 80*, 576–610. doi:10.3102/0034654310364533.

Broh, B. A. (2002). Linking extracurricular programming to academic achievement: Who benefits and why? *Sociology of Education, 75*(1), 69–95.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

Brown, R., & Evans, W. P. (2002). Extracurricular activity and ethnicity – creating greater school connection among diverse student populations. *Urban Education, 37*, 41–58. doi:10.1177/0042085902371004.

Burton, J. M., Horowitz, R., & Abeles, H. (2000). Learning in and through the arts: The question of transfer. *Studies in Art Education, 41*(3), 228–257.

Carver, P. R., & Ikura, I. U. (2006). *After-school programs and activities: 2005* (Vol. Rep. No. 2006–076). Washington, DC: U.S. Department of Education, National Center for Education Statistics

Cooper, H., Valentine, J. C., Nye, B., & Lindsay, J. J. (1999). Relationships between five after-school activities and academic achievement. *Journal of Educational Psychology, 91*(2), 369–378.

Cross, A. B., Gottfredson, D. C., Wilson, D. M., Rorie, M., & Connell, N. (2010). Implementation quality and positive experiences in after-school programs. *American Journal of Community Psychology, 45*, 370–380. doi:10.1007/s10464-010-9295-z.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Perennial.

Csikszentmihalyi, M., & Kleiber, D. A. (1991). Leisure and self-actualization. In B. L. Driver, P. J. Brown, & G. L. Peterson (Eds.), *Benefits of leisure* (pp. 91–102). State College: Venture.

Csikszentmihalyi, M., & Larson, R. (1984). *Being adolescent: Conflict and growth in the teenage years*. New York: Basic Books.

Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1993). *Talented teenagers: The roots of success and failure*. New York: Cambridge University Press.

Damon, W. (2008). *The path to purpose: How young people find their calling in life*. New York: Free Press.

Darling, N. (2005). Participation in extracurricular activities and adolescent adjustment: Cross-sectional and longitudinal findings. *Journal of Youth and Adolescence, 34*(5), 493–505.

Dotterer, A. M., McHale, S. M., & Crouter, A. C. (2007). Implications of out-of-school activities for school engagement in African American adolescents. *Journal of Youth and Adolescence, 36*, 391–401. doi:10.1007/s10964-006-9161-3.

Durlak, J. A., & Weissberg, R. P. (2007). *The impact of after-school programs that promote personal and social skills* (p. 50). Chicago: Collaborative for Academic, Social, and Emotional Learning (CASEL).

Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American Journal of Community Psychology, 45*, 294–309. doi:10.1007/s10464-010-9300-6.

Dworkin, J. B., Larson, R., & Hansen, D. (2003). Adolescents' accounts of growth experiences in youth activities. *Journal of Youth and Adolescence, 32*(1), 17–26.

Eccles, J. S., & Barber, B. L. (1999). Student council, volunteering, basketball, or marching band: What kind of extracurricular involvement matters? *Journal of Adolescent Research, 14*(1), 10–43.

Eccles, J. S., & Gootman, J. A. (2002). *Community programs to promote youth development*. Washington, DC: National Academy Press.

Eccles, J. S., et al. (1993a). Negative effects of traditional middle schools on students' motivation. *The Elementary School Journal, 93*(5), 553–574.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., et al. (1993b). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist, 48*(2), 90–101.

Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In N. Eisenberg (Ed.), *Handbook of child psychology* (Vol. 3, pp. 1017–1095). New York: Wiley.

Eccles, J. S., Barber, B. L., Stone, M., & Hunt, J. (2003). Extracurricular activities and adolescent development. *Journal of Social Issues, 59*(4), 865–889. doi:10.1046/j.0022-4537.2003.00095.x.

Einstein, A. (1954). In Modern Library (Ed.), *Ideas and opinions*. New York: Modern Library.

Erikson, E. H. (1968). *Identity: Youth, and crisis* (1st ed.). New York: Norton.

Erikson, E. H. (1980). *Identity and the life cycle*. New York: Norton.

Fichman, W., Schutte, D. A., & Solomon, B. (2001). The development of an enduring commitment to service work. In M. Michaelson & J. Nakamura (Eds.), *Supportive frameworks for youth engagement* (pp. 5–18). San Francisco: Jossey-Bass.

Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*(2), 117–142.

Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology, 82*(2), 221–234.

Folkestad, G. (2002). National identity and music. In R. A. R. MacDonald, D. J. Hargreaves, & D. Miell (Eds.), *Musical identities* (pp. 151–162). Oxford: Oxford University Press.

Fredricks, J. A., & Eccles, J. S. (2006a). Extracurricular involvement and adolescent adjustment: Impact of duration, number of activities, and breadth of participation. *Applied Developmental Science, 10*(3), 132–146.

Fredricks, J. A., & Eccles, J. S. (2006b). Is extracurricular participation associated with beneficial outcomes? Concurrent and longitudinal relations. *Developmental Psychology, 42*(4), 698–713.

Fredricks, J. A., Alfred-Liro, C. J., Hruda, L. Z., Eccles, J. S., Patrick, H., & Ruan, A. M. (2002). A qualitative exploration of adolescents' commitment to athletics and the arts. *Journal of Adolescent Research, 17*(1), 68–97.

Gerber, S. B. (1996). Extracurricular activities and academic achievement. *Journal of Research and Development in Education, 30*(1), 42–50.

Goodenow, C. (1992). *School motivation, engagement, and sense of belonging among urban adolescent students* (p. 31). Washington, DC: ERIC Clearinghouse.

Goodenow, C. (1993). The psychological sense of school membership among adolescents – scale development and educational correlates. *Psychology in the Schools, 30*(1), 79–90.

Grossman, J., Cambell, R., & Raley, B. (2007). *Quality time after school: What instructors can do to enhance learning*. Philadelphia: William T. Grant Foundation.

Haggard, L. M., & Williams, D. R. (1992). Identity affirmation through leisure activities: Leisure symbols of the self. *Journal of Leisure Research, 24*(1), 1–18.

Hamilton, L. (2009). Foreword. In J. Youniss & P. Levine (Eds.), *Engaging young people in civic life* (pp. 9–11). Nashville: Vanderbilt University Press.

Hansen, D. M., Larson, R. W., & Dworkin, J. B. (2003). What adolescents learn in organized youth activities: A survey of self-reported developmental experiences. *Journal of Research on Adolescence, 13*, 25–56.

Hirsch, B. J., Mekinda, M. A., & Stawicki, J. (2010). More than attendance: The importance of after-school program quality. *American Journal of Community Psychology, 45*, 447–452. doi:10.1007/s10464-010-9310-4.

Hirsch, B. J., Deutsch, N. L., & DuBois, D. L. (2011). *After-school centers and youth development: Case studies of success and failure*. New York: Cambridge University Press.

Holland, A., & Andre, T. (1987). Participation in extracurricular activities in secondary school: What is known, what needs to be known? *Review of Educational Research, 57*(4), 437–466.

Hoxie, A.-M. E., & DeBellis, L. (2012, April). *The academic benefits of expanded students' learning opportunities.* Paper presented at the annual meeting of the American Educational Research Associates, Vancouver.

James-Burdumy, S., Dynarski, M., & Deke, J. (2007). When elementary schools stay open late: Results from the national evaluation of the 21st Century Community Learning Centers program. *Educational Evaluation and Policy Analysis, 29*(4), 296–318.

Jordan, W. J., & Nettles, S. M. (2000). How students invest their time out of school: Effects on school-related outcomes. *Social Psychology of Education, 3*, 217–243.

Kackar, H. Z. (2011, April). *Adolescents' subjective experiences in community-based service-learning in relation to their reasons and intentions for future involvement.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Kahne, J., & Middaugh, E. (2009). Democracy for some: The civic opportunity gap in high school. In J. Youniss & P. Levine (Eds.), *Engaging young people in civic life* (pp. 29–58). Nashville: Vanderbilt University Press.

Kerr, D., & Cleaver, E. (2009). Strengthening education for citizenship and democracy in England: A progress report. In J. Youniss & P. Levine (Eds.), *Engaging young people in civic life* (pp. 235–272). Nashville: Vanderbilt University Press.

Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55*(1), 170–183.

Larson, R. W., & Brown, J. R. (2007). Emotional development in adolescence: What can be learned from a high school theater program? *Child Development, 78*(4), 1083–1099.

Larson, R. W., & Kleiber, D. (1993). Daily experience of adolescents. In P. H. Tolan & B. J. Cohler (Eds.), *Handbook of clinical research and practice with adolescents* (pp. 125–145). New York: Wiley.

Larson, R. W., & Verma, S. (1999). How children and adolescents spend time across the world: Work, play, and developmental opportunities. *Psychological Bulletin, 125*(6), 701–736.

Larson, R. W., & Walker, K. C. (2010). Dilemmas of practice: Challenges to program quality encountered by youth program leaders. *American Journal of Community Psychology, 45*, 338–349. doi:10.1007/s10464-010-9307-z.

Larson, R. W., Hansen, D., & Walker, K. (2005). Everybody's gotta give: Development of initiative and teamwork within a youth program. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after-school and community programs* (pp. 159–184). Mahwah: Erlbaum.

Larson, R. W., Hansen, D. M., & Moneta, G. (2006). Differing profiles of developmental experiences across types of organized youth activities. *Developmental Psychology, 42*(5), 849–863.

Lerner, R. M. (2004). *Liberty: Thriving and civic engagement among America's youth*. Thousand Oaks: Sage.

Lerner, R. M., Lerner, J. V., Phelps, E., et al. (2008a). *The positive development of youth: Technical report.* http://ase.tufts.edu/iaryd/documents/4HStudyAnnualReport2008.pdf. Accessed 3 Dec 2009.

Lerner, R. M., Lerner, J. V., Phelps, E., et al. (2008b). *The positive development of youth: Report of the findings from the first four years of the 4-H study of positive youth development*. http://ase.tufts.edu/iaryd/documents/4HStudyAnnualReport2008.pdf. Accessed 2 Oct 2009.

Levine, P., & Youniss, J. (2009). Introduction: Policy for youth civic engagement. In J. Youniss & P. Levine (Eds.), *Engaging young people in civic life* (pp. 1–9). Nashville: Vanderbilt University Press.

Li, Y., Phelps, E., Lerner, J. V., & Lerner, R. M. (2009, April). *Educational expectations and academic achievement in adolescence: The mediating role of school engagement and intentional self-regulation.* Paper presented at the biennial meeting of the Society for Research in Child Development, Denver, CO.

Li, Y., Lerner, J. V., & Lerner, R. M. (2010). Personal and ecological assets and academic competence in early adolescence: The mediating role of school engagement. *Journal of Youth and Adolescence, 39*, 801–815. doi:10.1007/s10964-010-9535-4.

Mahoney, J. L. (2000). School extracurricular activity participation as a moderator in the development of antisocial patterns. *Child Development, 71*(2), 502–516.

Mahoney, J. L., & Cairns, R. B. (1997). Do extracurricular activities protect against early school dropout? *Developmental Psychology, 33*(2), 241–253.

Mahoney, J. L., & Stattin, H. (2000). Leisure activities and adolescent antisocial behavior: The role of structure and social context. *Journal of Adolescence, 23*(2), 113–127.

Mahoney, J. L., Stattin, H., & Magnusson, D. (2001). Youth recreation center participation and criminal offending: A 20-year longitudinal study of Swedish boys. *International Journal of Behavioral Development, 25*, 509–520.

Mahoney, J. L., Schweder, A. E., & Stattin, H. (2002). Structured after-school activities as a moderator of depressed mood for adolescents with detached relations to their parents. *Journal of Community Psychology, 30*(1), 69–86.

Mahoney, J. L., Larson, R. W., & Eccles, J. S. (Eds.). (2005a). *Organized activities as contexts of development: Extracurricular activities, after-school and community programs*. Mahwah: Lawrence Erlbaum.

Mahoney, J. L., Larson, R. W., Eccles, J. S., & Lord, H. (2005b). Organized activities as development contexts for children and adolescents. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after-school and community programs* (pp. 3–22). Mahwah: Erlbaum.

Mahoney, J. L., Lord, H., & Carryl, E. (2005c). An ecological analysis of after-school program participation and the development of academic performance and motivational attributes for disadvantaged children. *Child Development, 76*(4), 811–825.

Mahoney, J. L., Parente, M. E., & Lord, H. (2007). After-school program engagement: Links to child competence and program quality and content. *The Elementary School Journal, 107*(4), 385–404.

Marsh, H. W. (1992). Extracurricular activities: Beneficial extension of the traditional curriculum or subversion of academic goals? *Journal of Educational Psychology, 84*(4), 553–562.

Maton, K. I., & Salem, D. A. (1995). Organizational characteristics of empowering community settings: A multiple case study approach. *American Journal of Community Psychology, 23*, 631–656. doi:10.1007/bf02506985.

McGuire, J. K., & Gamble, W. C. (2006). Community service for youth: The value of psychological engagement over number of hours spent. *Journal of Adolescence, 29*, 289–298. doi:10.1016/j.adolescence.2005.07.006.

McHale, S. M., Crouter, A. C., & Tucker, C. J. (2001). Free-time activities in middle childhood: Links with adjustment in early adolescence. *Child Development, 72*(6), 1764–1778.

McIntosh, H., Metz, E., & Youniss, J. (2005). Community service and identity formation in adolescents. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after-school and community programs* (pp. 331–351). Mahwah: Lawrence Erlbaum.

McLaughlin, M. W., & Irby, M. A. (1994). Urban sanctuaries: Neighborhood organizations that keep hope alive. *Phi Delta Kappan, 76*(4), 300–306.

National Center for Health Statistics. (2005). *Prevalence of overweight among children and adolescents: United States*, 1999–2002. http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overwght99.htm. Accessed 21 June 2006.

Newmann, F. M. (Ed.). (1992). *Student engagement and achievement in American secondary schools*. New York: Teachers College Press.

Noddings, N. (2003). *Happiness and education*. Cambridge, UK: Cambridge University Press.

Pierce, K. M., Bolt, D. M., & Vandell, D. L. (2010). Specific features of after-school program quality: Associations with children's functioning in middle childhood. *American Journal of Community Psychology, 45*, 381–393. doi:10.1007/s10464-010-9304-2.

Pittman, K. J., Irby, M. A., Yohalem, N., & Wilson-Ahlstrom, A. (2004). Blurring the lines of learning: The role of out-of-school programs as complements to formal learning. *New Directions for Youth Development: After School Worlds: Creating a New Social Space for Developing and Learning, 101*, 19–41.

Posner, J. K., & Vandell, D. L. (1994). Low-income children's after-school care: Are there beneficial effects of after-school programs? *Child Development, 65*(2), 440–456.

Posner, J. K., & Vandell, D. L. (1999). After-school activities and the development of low-income urban children: A longitudinal study. *Developmental Psychology, 35*(3), 868–879.

Rhodes, J. E., & Spencer, R. (2005). Someone to watch over me: Mentoring programs in the after-school lives of children and adolescents. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after-school and community programs* (pp. 419–435). Mahwah: Lawrence Erlbaum.

Roderick, M. (1993). *The path to dropping out: Evidence for interventions*. Westport: Auburn House, Greenwood Publishing Group.

Sheldon, J., Arbreton, A., Hopkins, L., & Grossman, J. B. (2010). Investing in success: Key strategies for building quality in after-school programs. *American Journal of Community Psychology, 45*, 394–404. doi:10.1007/s10464-010-9296-y.

Shernoff, D. J. (2010). Engagement in after-school programs as a predictor of social competence and academic performance. *American Journal of Community Psychology, 45*, 325–337.

Shernoff, D. J., & Hoogstra, L. (2001). Continuing motivation beyond the high school classroom. *New Directions for Child and Adolescent Development, 93*, 73–87.

Shernoff, D. J., & Vandell, D. L. (2007). Engagement in after-school program activities: Quality of experience from the perspective of participants. *Journal of Youth and Adolescence, 36*, 891–903.

Shernoff, D. J., & Vandell, D. L. (2008). Youth engagement and quality of experience in after-school programs. *Afterschool Matters Occasional Papers Series, 9*, 1–14.

Smith, C., Peck, S. C., Denault, A.-S., Blazevski, J., & Akiva, T. (2010). Quality at the point of service: Profiles of practice in after-school settings. *American Journal of Community Psychology, 45*, 358–369. doi:10.1007/s10464-010-9315-z.

Speer, P. W. (2008). Altering patterns of relationship and participation: Youth organizations as a setting-level intervention. In M. Shinn & H. Yoshikawa (Eds.), *Toward positive youth development: Transforming schools and community programs* (pp. 213–228). Oxford, UK: Oxford University Press.

Vandell, D. L., & Corasaniti, M. A. (1988). The relation between third graders' after-school care and social, academic, and emotional functioning. *Child Development, 59*(4), 868–875.

Vandell, D. L., Pierce, K. M., & Dadisman, K. (2005a). Out-of-school settings as a developmental context for children and youth. In R. V. Kail (Ed.), *Advances in child development and behavior* (Vol. 33, pp. 43–77). New York: Academic.

Vandell, D. L., Shernoff, D. J., Pierce, K. M., Bolt, D. M., Dadisman, K., & Brown, B. B. (2005b). Activities, engagement, and emotion in after-school programs (and elsewhere). *New Directions for Youth Development, 105*, 121–129.

Vandell, D. L., Pierce, K. M., Brown, B. B., Lee, D., & Bolt, D. M. (2009, April). *A multi-site study of promising after-school programs.* Paper presented at the annual meeting of the American Educational Research Association, San Diego.

Yohalem, N., & Wilson-Ahlstrom, A. (2010). Inside the black box: Assessing and improving quality in youth programs. *American Journal of Community Psychology, 45*, 350–357. doi:10.1007/s10464-010-9311-3.

Youniss, J., & Yates, M. (1997). *Community service and social responsibility in youth*. Chicago: University of Chicago Press.

Chapter 13
Model After-School Programs

Introduction

As discussed in Chap. 1, we have defined *optimal learning environments* as those with empirical support for engaging youth. It turns out that several of the most colorful examples of optimal learning environments occur in the after-school context. Perhaps this is not altogether surprising given the power of OST and after-school programs to support positive youth development and experiences, as described in Chap. 12. In this chapter, we examine four engaging after-school programs: (a) PeaceJam (community service and social action program), (b) The Young Women Leaders Program, (c) The Center for Family Life's Lifelines Community Art Project, and (d) Project Explore (Science exploration program). For each, I present a description of the program, observations made upon visiting the program, and a summary of research findings demonstrating a high level of youth engagement among participants. This leads to some general observations and conclusions about what can be learned from focusing on engagement in after-school programs.

PeaceJam

PeaceJam (see www.peacejam.org) is an international education program built around 12 participating Nobel Peace Prize Laureates who work within the program to "pass on the spirit, skills, and wisdom they embody." Participating Laureates include the Dalai Lama, Archbishop Desmond Tutu, President Oscar Arias Sanchez, and other world-renowned champions for peace and nonviolent social change. The goal of PeaceJam is to "inspire a new generation of young leaders committed to positive change in themselves, their communities, and their world" (PeaceJam materials).

PeaceJam was founded in 1996 in Denver, Colorado, to transcend racial, political, and economic boundaries and address widespread feelings of powerlessness

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Table 13.1 PeaceJam's ten global calls to action

1.	Equal access to water and other natural resources
2.	Ending racism and hate
3.	Halting the spread of global disease
4.	Eliminating extreme poverty
5.	Social justice and human rights for all
6.	Controlling the proliferation of weapons
7.	Restoring the earth's environment
8.	Rights for women and children and their role as leaders
9.	Investing in human security
10.	Breaking the cycle of violence

and hopelessness among today's youth. The participating Laureates are directly involved with creating and developing the curriculum and educational programs for youth ages 5–29. PeaceJam is the only organization in the world in which many Nobel Peace Laureates work together for the welfare of the next generation of youth. Since its launch, more than 600,000 young people worldwide have participated in the program. Through PeaceJam programs worldwide, *more than one million new service projects have been implemented* and thousands of new volunteer opportunities have been created. However, this work has only begun. By generating a *worldwide movement of youth* to tackle the toughest issues facing the planet today through its Global Calls to Action, its mission is to create *one billion* "acts of peace" or service in the next 10 years (PeaceJam materials).

Here's how it works. Local PeaceJam clubs are started for elementary, middle school, or high school youth as class, after-school, or faith-based clubs in which youth work on service projects of choice under the supervision of a volunteering adult. After paying a small fee to join PeaceJam, the club is officially registered and trainings are provided to supervisors and leaders through the regional PeaceJam association. In their service projects, clubs target issues of concern nationally, internationally, or in the youth's own community—issues like violence, discrimination, the environment, or human rights.

Clubs carry out projects while concurrently participating in PeaceJam's service-learning curriculum revolving around "10 Global Calls to Action," which are the most pressing issues facing the world today as identified by the participating Nobel Laureates (see Table 13.1).

A unique feature of the high school (i.e., "Ambassadors") program is that it includes a regional Annual PeaceJam Youth Conference in which young Ambassadors spend a structured and supervised weekend-long retreat with a featured Nobel Peace Laureate. The youth present their service projects to the Laureate, hear the Laureate speak, interact with the other PeaceJam Ambassadors in the region, and become inspired by a vision for achieving world peace.

Visiting PeaceJam

I had the opportunity to attend the weekend-long Great Lakes PeaceJam (the regional PeaceJam association serving the Midwestern United States) youth conference in Kalamazoo, Michigan, in the spring of 2010. I was personally inspired by the featured Nobel Laureate, Betty Williams, who was awarded the Nobel Peace Prize in 1977. Like many people in Northern Ireland, she had lost several family members to violence in the region. After witnessing a runaway car driven by an IRA member crashing into a family of four out for a walk, killing all three children and leading to the suicide of the surviving mother, she organized several demonstrations that built a foundation for a more peaceful future. She made a passionate plea for peace and nonviolence as well as the responsibility to counter social injustices like atrocities committed to children during wartime. I do not think there was anyone in attendance who was not spiritually moved by her courage, passion, determination, and hope in her several addresses throughout the weekend.

Colorful and creative poster displays attested to a wide variety of service projects undertaken by Great Lakes PeaceJammers, including projects to improve childhood literacy, plant trees, host rock concerts for peace, hold food drives, educate on issues related to teen dating, stop child abuse, paint and deliver pumpkins for local senior citizens, and raise awareness on issues from AIDS to drugs and alcohol to domestic violence. Some hosted a "walk for warmth" to collect clothes for those in need, while others organized a 24-hour relay "race for life" and balloon launch to raise money for cancer research. Towards the end of the weekend, the various clubs participated in a climactic presentation session in which youth took leadership roles in presenting their projects to the Laureate and the entire conference on stage. This was met both by many hugs from the Laureate and applause from fellow PeaceJammers. By the time the dizzying display of selfless service was over, it was obvious that some clubs had completed literally dozens of service projects within the single year, asking nothing in return.

There were other speaking opportunities as well in which youth and adults alike shared their sources of inspiration for joining PeaceJam, giving moving accounts of what their involvement meant to them and telling stories of personal struggle and growth. Regardless of age, all were inspired by being in communion with so many others at the conference "who think the same way"—those sharing the strong value to serve our common humanity.

My encounter with the program was a formative experience. Upon my return, my personal "act of peace" was to start a PeaceJam Scholars club and student association at my own institution, Northern Illinois University. We are now actively forming partnerships with schools and youth organizations in the surrounding areas of DeKalb and hoping to host events with Nobel Laureates in the near future.

Research on PeaceJam

Jones and colleagues's extensive and ongoing research is based on surveys, interviews, and focus groups with over 500 PeaceJam participants (Jones 2011; Jones et al. 2010, 2011; Waranar et al. 2010). The researchers found that participation in PeaceJam fostered a strong sense of youth purpose as well as individual and community engagement. Participation was also associated with civic engagement and values, commitment to social action, positive academic engagement, strong adult–youth relationships, psychosocial well-being, social identity, perspective taking, artistic expression and self-discovery, and other factors related to personal and social change. Furthermore, students' levels of participation and involvement had a strong impact on the primary positive outcome of interest and self-determination (consisting of autonomy, belongingness, and competence components; Jones 2011). Participation in PeaceJam also provided opportunities for young people to reconcile and create moral identities with positive personal and social consequences.

The Young Women Leaders Program (YWLP) at the University of Virginia

Founded in 1997 at the University of Virginia (UVa), The Young Women Leaders Program (YWLP[1]; see http://ywlp.virginia.edu/) is a voluntary mentoring program to help seventh grade girls reach their full potential. Co-sponsored by the UVa's Women's Center and Curry School of Education, the program has served over 1,000 girls with the goal of enhancing their capacities for connection, competence, leadership, and autonomy. In the process, the program provides support for civic engagement, self-discovery, and respecting diversity.

YWLP matches middle school "Little Sisters" with college aged "Big Sisters." The program then combines one-on-one mentoring with structured group meetings. Each year, seventh grade clubs are formed from eight to ten Big/Little Sister pairs. Clubs meet weekly after school for a 2-h curriculum-based mentoring session led by one or two graduate or advanced undergraduate student facilitators. With the Big Sisters taking a mentoring role, the group addresses issues and solves problems related to girls' sense of self, scholastic achievement, body image, and relationship and behavioral problems. The group also explores healthy alternatives to risky decisions that adolescent girls may make at this age. A variety of rituals and activities include a group check in called "high/lows" (sharing best and worst moments of the week), "sister time" (one-on-one mentoring to catch up on homework—and each other), connecting energizers (icebreakers), and group discussion on "hot topics" (topics written anonymously on a note by a group member). Structured lessons include "the ABCs of problem solving," a technique to help girls slow down and consider options when confronting a

[1]The WYLP curriculum was developed based on research by University of Virginia professor of clinical psychology, Edith "Winx" Lawrence, and colleagues the Curry School and Women's Center.

problem (Markowitz et al. 2014). The yearlong program allows girls to explore leadership, friendship, and difference and to give back to the community. Pairs also spend at least 1 h/week in one-on-one mentoring focused on personal issues.

Little Sisters are nominated by school contacts as youth who are at risk for making poor academic or social/emotional decisions but show leadership potential. Then, they are invited to join. To participate, they must commit to attending the weekly mentoring sessions for a full year. However, a unique feature of YWLP is the high level of training Big Sisters undergo. After committing to a year of program participation and passing a screening, Big Sisters train to become mentors in two academic service-learning courses at the University of Virginia: Issues Facing Adolescent Girls and Issues Facing College Women. During both courses, considerable time is devoted to providing supervision on specific issues affecting the women's ability to mentor effectively.

YWLP hosts a variety of special activities and events throughout the year. These include "play days," which are opportunities for pairs to get together and have local fun ice skating, bowling, camping, or in other such activities; an appreciation dinner in which group members prepare a special meal to honor special women in their lives such as mothers, grandmothers, or teachers and the Fall Finale, to which the entire YWLP community is invited and participants perform leadership presentations such as songs or skits to share their experiences with the program. YWLP brings the Little Sisters onto the UVa campus twice per year for capstone events to showcase what has been learned to parents, teachers, and other YWLP stakeholders as well as for concerts, fundraisers, and trips to the library. Such exposure provides a sense of familiarity and connection to university life for girls who might not automatically think of college as a part of their future.

Visiting YWLP

Thanks to YWLP staff, I had the good fortune of observing a 2-h after-school mentoring session at a participating middle school in Charlottesville, Virginia, in the fall of 2010. After-school chatter was in the air as the group convened, with some friendly sharing of personal news and updates by participating middle school "Littles" to the "Bigs" and YWLP staff. The session began with a small break and snack followed by a 20-min opportunity for 1:1 homework help.

Group activity then commenced with a role play activity. Different amounts of candy were dispensed to small groups of both Littles and Bigs. Each group was instructed to share the candy evenly within the group, but some groups received a lot of candy while others only a little. Several questions were then posed. First was simply a request for clarification of "what leaders do." Various Littles responded. "Leaders appreciate others," said one. "Leaders connect," offered another. And another: "Leaders help others."

Group facilitators of staff and Bigs compared the differential distribution of candy to the unequal distribution of income experienced by people living in different countries. Asked for examples of countries with little income, Littles provided the examples of Thailand, the Philippines, and Poland. Following this, facilitators

shared some sobering facts and statistics: Over 100 million people in the world are hungry. Much of the world's population lives on less than $2 per day, including a majority of the people living in countries such as Bangladesh and Haiti. Many people in Asia and Africa have poor access to clean water.

The facilitator prodded:

"Now, those of you whose group got only a little bit of candy, talk about how you felt when you saw other groups who got so much more."

Several expressed a sense of jealousy and unfairness.

Facilitator:

"Are you surprised when you see people who lack jobs and enough food right here in Charlottesville? Do you know of people like this?"

Several Littles shared stories of families they knew in which one of the parents lost their jobs. Others spoke about people they had known or seen at food banks or housing shelters.

Facilitators gradually shifted the conversation towards what could be done to help combat injustice around poverty. What should leaders do? What can governments do? A discussion of welfare, charitable efforts like food drives, and humanitarian aid to countries abroad ensued.

Then the question became more personal:

"What can *we* do?" One little suggested collecting cans and contributing the money they could collect for recycling them. Another suggested setting a goal to reach. Suggestions continued until time for the activity ran out.

Next Activity. Littles put anonymous notes about topics they would like to discuss and receive support and advice in a box. A facilitator randomly chose notes and read them aloud.

But first:

"What do Leaders do?"

"Leaders connect."

"And what don't we want – in order to create a safe space to share?"

"Tell people outside of the group."

"That's right, we need to keep each other's confidentiality. And try not to say or laugh if the note is from you. Leaders also help others, so let's try to help each other out."

In the spirit of following their leadership, I will refrain from relating the discussion from the activity that followed. However, the facilitators were clearly impressive in terms of their social skills in finessing the conversation, with sometimes very personal content requiring their guidance. Most importantly, they quite artfully allowed most of the guidance to come from their Big and Little peers.

Research on YWLP

A fair amount of preliminary research has been conducted on YWLP (Deutsch et al. submitted; Lee et al. 2010; Leyton-Armakan et al. 2012; Sovik et al. n.d.). Testifying to the strong engagement and commitment to the program data to date suggest that the combined approach of 1:1 mentoring with group mentoring results in a high rate of participant retention. Ninety-two percent of the middle school YWLP girls participated in the program for a full year, meeting at least 2 h/week with their mentor (Sovik et al.). Ninety-one percent of mentees indicated that their mentors were "very good" or "excellent." Over 75 % of the participating girls agreed that the program helped them to improve the way they listen to people with differing views and also helped them to support their friends, deal with problems, and think about the future. In addition, more than two-thirds agreed YWLP helped to improve how they think about themselves and how they make decisions about their behavior at school, including decisions about school involvement and communications with teachers.

Markowitz and colleagues' (2014) study found evidence that YWLP facilitated "relational flow" in the process of relationship formation. Participants were observed to frequently exhibit simultaneously high enjoyment, interest, and concentration while learning to balance relational challenges and skills. In particular, many participants learned to address relational challenges of speaking up in a group, sharing personal content, getting to know their mentors and group members, and being shy about new relationships by developing new social competencies such as active listening skills, communication and sharing skills, and emotional skills such as maintaining calmness and becoming less angry. Much of the relational flow was experienced in one-on-one mentoring sessions resulting in relational trust, but the group mentoring sessions were observed to act as a scaffold in developing new relational skills.

The middle school years in general can be a time of steady decline in self-esteem and school attachment (Eccles and et al. 1993; Eccles and Midgley 1990). However, over the course of the seventh grade, the trajectories of YWLP participants declined less than a control group in terms of self-esteem and self-reported GPA. In terms of participants' emotional engagement, school bonding attachment and commitment sharply declined for the control group, whereas it actually improved over the seventh grade year for program participants. The same was true for self-reported tolerance (Lee et al. 2010). Given the importance of healthy relationships for youth in early adolescence, more such youth programs in which relationship skills are the primary rather than secondary goal would appear to be needed.

Research also suggested that providing a school-based mentoring program had other payoffs as well. For example, the school and teachers shared concerns about the mentees' academic performance with the mentors, and mentors increasingly shared examples of mentees' positive changes as a program year progressed.

The Center for Family Life's Lifelines Community Art Project in Sunset Park, Brooklyn

The Center for Family Life (CFL; see http://sco.org/our-core-services/center-for-family-life-in-sunset-park/) in Sunset Park, Brooklyn, is a social services organization for children and families. Since 1978, the Center has been a force for positive change and a pioneer for effective neighborhood-based services and programs in counseling, employment, education, arts, and recreation (Dubow 2010). Sunset Park is a densely populated, low-income neighborhood with a high percentage of recent immigrants, especially from South America and China.

The Lifelines Community Arts Project ("Lifelines") is a free, nationally recognized program giving expression to social and cultural issues and events through the performing and visual arts in order to promote cultural understanding and strengthen bonds between cultural groups. Quality arts instruction is provided in after-school, summer, and in-school arts programs through interaction with a staff of artists, social workers, and young adults. Serving 6th through 12th grade students, the program is housed primarily at a neighborhood middle school and includes participants from an affiliated nearby high school.

The Lifelines after-school arts program runs 5 days/week in grades six to eight and is open to all students in the school (approximately 75 students every day). The program offers instruction in dance, acting, vocals, percussion, visual arts, and creative writing along with daily homework assistance, computer-based projects, and academic enrichment (Dubow 2010). The sixth grade students cycle through a regular schedule each week that includes homework help sessions and instruction in each of the art forms. In seventh grade, students meet twice a week as a group to participate in community service projects. For example, students may participate in food drives for their community, stock the shelves at neighborhood stores, or assist in the preparation for the New York City Marathon aid station (Hoxie 2014). The students also have opportunities to learn a variety of dance types and learn about a diversity of cultures in the process. For instance, when learning African dance, a cultural history lesson is given about how the dance was created before demonstrating the physical movements of the dance (Hoxie 2014).

By the eighth grade, participants may select art activities of choice on a daily basis. For example, they have the option to take part in visual arts, performance arts such as theater and dance, and/or music. A select group of eighth grade students are also a part of traveling theater and dance troupes, including a fine art, percussion, and choral singing troupe that specialize in dance or theater (Hoxie 2014). Each year, the troupe workshops and performances reach more than 3,000 children, parents, senior citizens, and professionals in New York City.

Instruction in the visual arts bring out the struggles and vitality of the diverse neighborhood and immerse participants in cultural exploration. Instruction in the performing arts culminates in two or three major productions per year that include improvisational drama with teen-created characters, songs, and dance. The productions include a musical adaptation of literature from the middle school reading list.

This is especially remarkable given that many of the students in the program are classified as special education students, have individualized education plans (IEPs), and struggle with school on a day-to-day basis (Hoxie 2014).

Visiting Lifelines

When visiting the Lifelines program in the fall of 2010, one could not help but to be struck by visually stunning paintings and murals that lined the halls and classrooms. The skillfully crafted works combined bright and vivid colors composed in a wide variety of media. The Lifelines program is the fortunate recipient of multiple funding streams, including state, city, community, and private foundation sources. Because of this, Lifelines is composed of a variety of separately funded "pieces," such as the full-time artists who lead much of the arts programming, a tutoring program run by social workers and ninth graders from the high school considered to be "leaders in training," and the Dance Troupes. One might say that the program itself is woven together "like a piece of art."

The program began with the homework help session, and I had the opportunity to visit several classrooms for homework help. Several of the tutors were the ninth grade junior staff from the high school. As an extension of the academic program, with its norms of evaluation and perceived lack of autonomy, homework help sessions are frequently among the least engaging and effectively positive activity types in after-school programs (Shernoff and Vandell 2007). However, most of the students in this classroom appeared to be in deep absorption reading or writing. The tutors structured academic enrichment activities based on students' personal interests so that activities may be perceived as voluntary and beyond "mere homework." For example, students were allowed to choose books and writing projects and staff worked with teachers in the day program so that students could receive credit for work completed that was not a part of the prescribed curriculum.

I happened to visit on one of the few days of the year in which the entire focus was on preparation for their quickly approaching production. After the homework help session, all of the students in the program spent the rest of their time at the stage area. This year's holiday production was to be Norton Juster's *The Phantom Tollbooth.* After 20 min, students worked quietly in small groups on and around the stage creating props and discussing dialogue in different scenes. All reported to the seats of the theater where the head coordinator gave further directions. The coordinator emphasized the importance of the group being a supportive audience and community. She next asked for an example of being a supportive audience. Many students volunteered responses of "do's" (e.g., listening, clapping, laughing in response to dramatic humor) and don'ts (e.g., pointing, teasing). This was followed by scene-by-scene rehearsals featuring a spirited and talented display of acting (with seemingly all lines memorized by now) and dynamic, well-choreographed dance as directed by the coordinator and drama coaches.

Research on the Lifelines Program

The Lifelines program has been evaluated over the course of 3 years by The After-School Corporation (TASC), a nonprofit organization whose mission is to give all children expanded learning opportunities that support, educate, and inspire them (Hoxie 2014). Youth surveys included scales assessing initiative experiences and social skills from the Youth Experience Survey, a tool that investigates the learning experiences that youth report while participating in youth programs (Hansen, Larson, & Dworkin, 2003).

Results of the continuing evaluation reveal that, to date, the middle school Lifelines program scores higher than nearly all of the 67 comparable after-school programs that TASC monitors in three engagement domains: positive relationships between youth and their staff members, instructional support provided by the after-school staff, and activity content and structure (The After School Corporation 2008). The vast majority of students responded positively on *every* item in the survey, such as "I set goals for myself in this program," "I learned to push myself," "I learned to focus my attention," "I learned about developing plans for solving a problem," "I learned to be patient with other group members," and "I learned how my emotions and attitude affect others in the group," with a range of 77–94 %.

Project Exploration

Founded in 1999, Project Exploration (PE; see http://www.projectexploration.org) is a nonprofit science education program providing access to personalized experience with science and scientists for minority youth, girls, and other groups traditionally underrepresented in the sciences (Project Exloration 2009). PE programs foster involvement with a variety of scientific disciplines, providing a window into how science really works through encounters with exhibits, online initiatives, OST activities, and public science programs. Working with more than 250 students between the ages of 12 and 17 in the Chicago Public Schools each year, it allows youth to explore a variety of academic disciplines free of charge (Smith et al. 2010). Approximately 85 % of participants are from low-income families, predominately of African-American or Latino ethnicity. PE strives to provide a new model for engaging and retaining youth in science and technology through a personalized approach to authentic fieldwork and leadership development, and by targeting students who are open-minded and curious regardless of academic or economic standing. Many of the students PE works with are not academically successful in school, so they try to create opportunities for them to feel successful in other spaces and settings (Smith 2010).

With a focus on positive development in the OST context and on fostering long-term involvement with science, PE intentionally works to nurture long-term relationships with its participants and equip them with the skills and experiences needed

to pursue science if they so choose (Lyon 2010). PE hopes to inspire students through personalized interaction with scientists in authentic, real-world, and hands-on opportunities to practice science. PE believes that some of the participants' lives are transformed by experiencing the wonders of science first hand. While offering a variety of distinct programs, they all include access to scientists, high-caliber academic content, and individualized, interest-based learning experiences guided by caring adults (Chi et al. 2011). Some of the PE programs include the following:

- *Sister4Science*, a weekly after-school program for minority middle school girls, developing leadership through exposure to women-scientist role models.
- *Junior Paleontologists*, a summer program immersing a dozen students in the world of paleontology and dinosaur fieldwork. Students first build academic skills in geology, anatomy, and paleontology for 2 weeks at the University of Chicago followed by traveling to South Dakota to do fieldwork on fossil-rich terrain alongside scientists.
- *All Girls Expedition*, an intensive, 2-week classroom and fieldwork experience in which minority middle and high school girls first gain hands-on science experiences and fieldwork skills in classroom sessions, followed by a 1-week expedition working along scientists in destinations such as Yellowstone National Park and Puerto Rico.

PE estimates that up to 40 % of their participants enroll in more than one program at a time and that they frequently return to the same program as a team leader, presenter, or in another advanced leadership capacity (Chi et al. 2011; Smith 2010). Staff intentionally foster a sense of community and strong, enduring relationships among participants. This occurs through informal practices, staff "check-ins" on participants, gatherings to celebrate accomplishments, and persistent effort and networking to keep in contact with alumni (Chi et al. 2011). Chi and colleagues observed that PE integrates many important characteristics of authentic *communities of practice*, or groups of people who interact regularly in order to participate in or learn about a shared interest or passion (Wenger 1998). Specifically, PE participants not only share a domain of interest (i.e., science), but also nurture relationships so that members can learn from each other. Members share not only interests but also practices and values.

Visiting Project Exploration

I visited a sixth grade Sisters4Science class on veterinary science in a Chicago elementary school. When I arrived, there were six sixth grade, African-American girls, the instructor, and the veterinarian scientist "guest of honor" sitting around a table. The veterinarian was not the only guest: a small, black dog quietly roamed the table top. As they were transitioning from the regular day program, the students were eating snacks as they journaled questions to ask the veterinarian.

The instructor, a trained staff member from Project Exploration, introduced the veterinarian, Dr. Kelly (an alias), who in turn introduced her small, black friend, Franny, a longhaired Chihuahua.

Following this, a student opened discussion with a question she had journaled: "Hi my name is Julia Brown (alias). My first question is: Do you like what you are doing?"

Dr. Kelly responded: "I love my job. The reason is that every day of the job is very different. I work with animal patients and do very different things with them, examining them, treating sick animals, surgery, cleaning teeth like a dentist, so I get to do a lot every day and every day is exciting."

The next student asked a question: "My cousin has a pit bull, fully grown now, and she says some people train their dog to be a an attack dog or a fighter, but that isn't a correct way to treat a dog because they weren't put on this planet to fight, but to protect … and other people, most people have pets, don't treat them right."

Dr. Kelly: "Yea, you are absolutely right, dogs were not put here to be aggressive, or to be trained to attack. That's completely unnatural for a dog. So when a dog attacks a person or another dog, unfortunately they were trained to be that way. So you are absolutely right, it's very harmful for the pet and harmful for society, for everybody, right?"

One student offered, "I want to be a veterinarian when I grow up!"

There was time for one more question, which was actually three-in-one: "'When did you decide to become a veterinarian?' 'Do you like dogs or cats?' And my third question is, 'Is that your personal dog or somebody else's?'"

Dr. Kelly: "I was actually about your age when I wanted to be a veterinarian. I was 9 years old. I was 9 because that's when I got my first pet, which was a cat. I knew when I was about your age that I really liked science, and I really liked animals, so that's something that always stuck with me, that I had a passion for."

The students and instructor become slightly distracted as Franny walks closer to her surrounding admirers.

Dr. Kelly continues: "Let's see, the other part of your question, 'Do I like cats or dogs?' I'm probably a little bit more of a cat person, that was my first pet. And my first cats all lived about 20 years, so I had them for a long, long time. Franny is my dog. I rescued Franny about 6 years ago. She was in a home where she was being neglected and abused. And they didn't take good care of her, and she was really, really, really, sick, and she needed emergency surgery, and she had a really bad mouth that you'll learn about later. She lost a lot of teeth, because she had a rotten mouth, because they were taking care of her, and they didn't have any money to take care of her, either. So I had them give up custody, because they couldn't take care of her, and I just fell in love with her, so I ended up keeping her. I ended up doing all of her surgeries. She ended up having two bladder stones bigger than her whole bladder. So she was really, really sick, and she wouldn't have lived without surgery.

Next, the instructor lays out the plan for the rest of the day: "So now we're going to move into learning a little more about what it means to be a veterinarian. And

then we have 3 stations we're going to set up. So after we learn what it means to be a veterinarian, we're going to learn about how you examine a dog, if you wanted to be veterinarian, and someone already said that they might be interested."

But first, says the instructor: "Ladies. I want Dr. Kelly to actually tell us the steps to becoming a veterinarian if you are ever interested in becoming one. So please pay attention, maybe take some notes. OK?"

With this cue, Dr. Kelly explains how to become a veterinarian in three to four easy-to-remember steps. She proceeds, "So the steps to becoming a vet are exactly the same to becoming a human doctor …."

Step 1: "You have to get really good grades in school, so you need to try to get all A's and B's, and what do you think are the most important subjects to do well in?"

Students: "Science."

Dr. Kelly: "Perfect. And what else do you have to be really good at?"

A student: "Math."

Dr. Kelly: "Very good. So science and math are big ones, especially the sciences."

Step 2: "And then you have to go to college for 4 years, ok, and when in college, you can major in anything that you want to major in, but you have to take a lot of science classes to prepare for vet school."

Step 3: "And then after college you have veterinary school, it's 4 years, just like medical school."

The instructor summarized and clarified: "Four years of college and then veterinary school is four years."

Dr. Kelly then explained an optional Step 4: "Then when you finish veterinary school, you can decide if you want to specialize in a certain specialty. If so, you have to go to school for another four years in order to specialize. Let's say you want to be a surgeon. You can specialize in surgery, or you can be a dentist, be a specialist in skin disease—that's called dermatology—so you can specialize in almost anything. For me, when I got out of veterinary school, I didn't want to specialize. I wanted to do general practice. Which means I do the general health for all cats and dogs, so I did not have to go on for further school. So that means I kind of get to do everything, and I kind of like that. Instead of doing one thing all day every day, I get to do everything for my patients."

The instructor asked the class, "Any questions about that—the career path?

Danielle (an alias) asked, "Would you say that being a doctor for human people is better than being a doctor for animals?"

Dr. Kelly responded, "You know, I think they're really different. And for me, it's better to be a doctor for animals, because that's what I'm passionate about, and that's what I love. I could have easily chosen to be a doctor for humans, but I really wanted to give back to the field. And if you follow your passions, you know, whatever you'll do, you'll never be unhappy. You'll always be happy in your job. And the nice thing about veterinary medicine, too, is that there are so many career opportunities that—let's say in five years I don't want to do what I'm doing anymore—I can completely change and do something else. I can go work for the government, or do something in public health; I can go and specialize, or I can go and work on a farm

with cows and pigs, or go and work with horses, so there are so many things that I can do."

Another student volunteered, "I have an opinion question."

Dr. Kelly: "You have an opinion? OK."

Student: "I feel that um, taking care of humans is easier than animals because humans can cooperate but animals can't."

Dr. Kelly responded, "Oh, that's a very good point. And that's a very important difference between people and animals, because people can come in and tell you what's wrong with them, right? They walk in the door and say my, 'My stomach hurts.' And you can tell the person, 'I need you to sit down while I draw your blood. I need you to stay still and hold your arm like this.' With animals, you can't do that, so that's kind of what makes my job exciting—is that I get to be really good at working with animals and getting them to sort of understand that we're trying to help them. And then you have to be a really good detective, so being a veterinarian is all about being a smart detective and figuring out what's wrong because your patients can't tell you what's wrong. So it's a little more thinking, I think, and a little more investigating, but it's very very fun."

Remaining questions and answers addressed why cats hiss, and the difference between the eyes of cats and humans, including the ability for many animals to see in the dark.

Next, the class transitioned to another table where Dr. Kelly showed the students medical models of various organs. First they looked at a model of an animal's teeth, displaying a healthy tooth, an unhealthy tooth, and a diseased tooth. Dr. Kelly teaches the class about how to identify plaque and tarter, and how animals need to have their teeth brushed (by their owners) to avoid gum disease just like humans. One model of a whole dog's mouth exhibited a healthy mouth on one side, and a diseased mouth on the other. This led to Dr. Kelly sharing how she had to pull 10 teeth from Franny's mouth and how dogs and cats have their own special kind of toothpaste. Next, Dr. Kelly showed the class a model of an animal's eye, and discussed how different mussels in animals' eyes cause them to keep their eyes open when they die. This was followed by sharing models of the spinal cord/vertebrae and elbow and knee joints, leading to a discussion of common related injuries among animals.

Next, Dr. Kelly had a bit of a surprise. She showed the class the real, preserved heart from a dog. The students took turns touching it. The last organ modeled was a kidney, accompanied by a discussion of kidney functions.

After answering a few more question, Dr. Kelly moved to examining Franny's teeth, saying, "So let's look at her mouth now. Do you want to see her teeth? Do you see there's a little bit of brownness on her teeth there? She has a little bit of plaque on her teeth." The instructor then facilitated a brief dialogue about what plaque is.

After answering a few more questions, Dr. Kelly announced, "So the next thing we are going to do is listen to Franny's heart." The students began putting on

stethoscopes that Dr. Kelly brought in and one by one took a turn listening to Franny's heart. Dr. Kelly asked, "So do you guys think that Franny has a faster or slower heart rate than humans?"

Most students thought it is faster.

Dr. Kelly confirmed: "So, the general rule of thumb, is the smaller the animal, the faster the heart rate. The smaller the animal, the higher the metabolism. So Franny's heart rate is probably between 120 and 140 beats per minute. You guys' heart rate is probably around 70 or 80 beats per minute."

A student announced, "I want to be a doctor!"

There was one last apprenticeship activity:

"OK, so now, with you guys playing doctor, you're going to tell me what's wrong with these animals over here, ok. So now we are going to look at some X-rays of the bodies, and now you know all of the body parts."

The group moved once again, this time to the last station: an X-ray viewing machine that shined a light through X-ray film. Dr. Kelly had brought in some X-rays taken previously of her animal patients. She put three X-rays up on the viewing machine one at a time, asking the students to guess what the picture showed.

First X-Ray: "This is a dog's stomach, ok? Do you see that this dog has something abnormal in his stomach?"

Student: "It's a toy fire hydrant."

Dr. Kelly: "It's a toy fire hydrant. Do you guys see a toy fire hydrant? And this is dog's real stomach! You guys are fast. That's the fastest I've ever seen an X-ray read. You guys are ready to be a doctor."

Students immediately knew that the second X-ray showed a fish hook caught inside an animal's body, but they could not make out what organ. Dr. Kelly guided them to discover that it was caught in the animal's esophagus, leading to a discussion of the location and function of the trachea and esophagus. Dr. Kelly explained that surgery cannot be performed on the esophagus, making the diagnosed animal a great candidate for *endoscopy*: placing a tube with a video camera on the end of it into the troubled area.

The last main activity of the day began with students journaling a half page or three to five sentences using the following format:

"I used to think …, but now I know …."

The first student shared: "I used to think veterinarian medicine was kind of harmful. Like sometimes it may cause behavioral problems that come from medicine. Now I know that veterinarian medicine helps changes in behavior. And now I think that the medicine is in no way harmful. I thank Dr. Kelly for coming."

Other students: "Me too, I thank Dr. Kelly, too."

The next student offered, "I used to think that a dog's mouth was clean and just had a little plaque, but now I know that they have a lot of plaque."She continued, "I sat here thinking dogs were aggressive, but I know now that dogs are nice if they are house trained. I learned the steps to becoming a veterinarian. I was scared but I'd like to thank Dr. Kelly for coming because I learned a lot today."

Dr. Kelly: "Oh, that's good. Thank you."

Instructor: "So before we stand up. So what I want to do next is take a picture with Dr. Kelly. So let's make this quick." A group photo with Dr. Kelly was taken, and the students were instructed to put the room back to its original condition.

The very last activity was the completion of a chart for determining the "Nobel Behavior Award" (NBA). First, they rated themselves as a group on the virtues of teamwork, courage, craftsmanship, perseverance, compassion, and organization. The instructor did not rate the class, but allowed the students to weigh in so that the ratings were a group determination. The final determination was which one student deserved the NBA distinction. After some debate, the NBA award for the day was given and the class adjourned for the day.

Afterwards, I spoke to the instructor as a key staff member of Project Exploration. Because Dr. Kelly did such an outstanding job, I wanted to know more about the recruitment and training of the scientists. She stated that they try to have several trainings per year for participating scientists. The training consists of understanding PE's pedagogical philosophy, which she described as "student centered and relationship based." PE goes over some sample activities, and helps the scientist apply them to what they would do to mentor students on their own profession. They see a strong connection with youth as critical and practice how to connect with youth specifically. Often, PE will have multiple exchanges with a scientist to help them refine their session and support the scientist as the plan evolves over time. Thus, the experts are trained to deliver effective lessons conforming to PE's philosophy of pedagogy and mentoring.

Research on Project Exploration

Project Exploration reports that over 96 % of their fieldwork participants graduate from high school; that 58 % of their participants enroll in a 4-year college, making them three times as likely to do so than nonparticipants; and that approximately a third of their alumni major in science once in college (Chi et al. 2011; Project Exloration 2009). Perhaps, one of the most convincing indicators of participant's engagement is a high number of students who return to the program as team leaders or teaching assistants after graduating from school (Smith 2010).

Through surveys and interviews with participants, Chi and colleagues (2011) found that participants overwhelmingly agreed with survey items (i.e., over 90 %) indicating that they had excellent opportunities to work with peers with similar scientific interests, ask questions, and explore new career possibilities through the program. Students appreciated that staff focused on their interests as opposed to only their abilities. They also overwhelmingly appreciated feeling supported, welcomed, and included by the PE community. In addition, they felt that the relationships nurtured, including the opportunity to meet and work with scientists, helped them in their career goals.

In a variety of meaningful ways, youth showed that through their experiences and relationships they "absorbed" the practices, values, and other important "memes" that are the result of good mentoring as one enters a new profession (Nakamura and Shernoff 2009). For example, members described envisioning themselves as scientists; understanding how scientists approach investigations; thinking about problems scientifically; understanding the trajectory of becoming a scientist; practicing science process skills like asking questions, making hypotheses, and collecting data; using scientific tools and instruments; moving from an understanding of facts to the set of questions that frame scientific debate; understanding the day-to-day work of real scientists; and developing a scientific way of understanding the world (Chi et al. 2011). Participants also felt that the program helped them to build psychosocial competencies like greater communication, teamwork, and leadership skills. If the session I observed was any example, participants were exposed to a new level of scientific language such as bladder stones, dermatology, endoscopy, and many parts of the anatomy including kidneys, trachea, esophagus, and abdomen. Undoubtedly, students appeared to be extremely engaged in learning a variety of scientific facts and concepts through their encounter with a respected scientist.

Lessons from After-School Programs

What may be learned from these visits to after-school programs that successfully engage youth according to research evidence? Certainly, there can be little question that each program does indeed engage youth in unique ways in keeping with its mission and unifying themes. For example, the high school PeaceJammers were unquestionably inspired to help make the world a better place and were encouraged by like-minded exemplars, mentors, and peers. For PeaceJam, engagement involved a shift in consciousness—from thinking about one's self to prioritizing the needs of others.

There were also several practices and principles in common among several of the model programs. First, most of the programs had a developmentally supportive philosophy of the population served: adolescence. Adolescence is a time of increasing need in terms of autonomy and interpersonal relationships (Eccles et al. 1993), as was emphasized in most of the programs observed. Unlike most academic programming, the programs recognized that adolescents have tons of energy and have the need for physical activity and social interaction with peers throughout the day. At the PeaceJam youth conference, for example, the more purposeful speaking and poster presentation sessions were broken up with highly charged, fun-filled dances and games of movement in which the youth blew off steam and enjoyed the camaraderie. The ability for youth to fulfill their need for exercise and movement appeared to be a unique advantage of the after-school world in general.

The Young Women Leaders Program undoubtedly engaged youth through mentoring and the intimate connections made with others and served as powerful context

for personal transformation and developing leadership abilities. Other programs were also suggestive of the importance of mentoring in order to establish a high level of interpersonal intimacy and sharing of life circumstances which is frequently craved by adolescent youth. At the PeaceJam conference, just as in all PeaceJam clubs, small groups participate in the PeaceJam service-learning curriculum led by volunteer PeaceJam Mentors/Scholars, college level or older. These sessions usually involved structured activities to increase awareness about issues such as violence, oppression, racism, or other social problems that almost all youth have experienced in some form first hand. The PeaceJam imperatives to be respectful, keep confidentiality, and above all "be yourself" provided an unusually accepting and trusting environment in which many youth open up to each other and realize that they are "not the only ones" going through some of life's greatest challenges such as divorce, death, loneliness, depression, or social exclusion.

In fact, many of the programs demonstrated the effectiveness of a mentoring structure to youth organizations. The Lifelines program showed that quality mentoring relationships and interactions can be an invaluable context for teaching and learning the practices and values of a profession such as the arts as much as for the sciences (Nakamura and Shernoff 2009). In Lifelines, participating high school students from the partnering high school took various mentoring roles. Some worked as program aides at the middle school, also called "leaders in training," recruited to be models for the younger middle school participants. They were also coached to be exemplary program participants who assisted the artist-teachers with particular art forms and acted as role models for the middle schools students. As youth became more seasoned staff members, they were provided with opportunities to take the lead in teaching topics like group choreography (Hoxie 2014).

Implications: Towards a Model of Expanded Learning Time and Opportunities

The Young Women Leaders Program illustrated the potential benefits of program participation for enhanced adaptation to school. Sometimes, this is facilitated by direct communication between program and school staff, as also illustrated by The Lifelines program. A key component of the high school Lifelines program is the strong connection that the after-school staff members have with the day school administration and staff. Each Lifelines staff member partners with a school day teacher. Art instructors partner not only with art teachers in the day school but also with teachers in math, English, and social studies to infuse arts into the traditional curriculum. The program thereby creates a seamless integration of the day and after-school school programs, building a stronger high school community to support student success (Hoxie 2014).

The integration between in-school and out-of-school components could also be evidenced in students' responses to the program, including the self-esteem and

sense of identity developed in the after-school program and the potential for this to transfer back to classroom performance (Hoxie 2014). Through their strong engagement in the arts after school, Lifelines participants gained both skills and motivation to succeed at school. For example, students might learn basic skills such as drawing in the art program that would help them when they employ the same skills at school. They also practiced approaching their work in a more creative way, a disposition they could transfer to the school context (Hoxie in press).

Finding Flow in Integrated After-School Programs

In the Lifelines program, it may first appear strange that so much benefit could come through the arts, which is, after all, only one of many school subjects. However, through students' encounters with the Lifelines program, art became an attitude, a special way of approaching work and life itself, a unique way to success. As Robert Henri (1923/2007) wrote in his classic work, *The Art Spirit*, "Art when really understood is the province of every human being. It is simply a question for doing things, anything, well. It is not an outside, extra thing. When the artist is alive in any person, whatever his kind of work may be, he becomes an inventive, searching, daring, self-expressing creature" (p. 11). In Csikszentmihalyi's (1990) book, *Flow*, adolescent-aged dancers described the sense of forgetting all of their problems and leaving their troubles and stresses behind when they enter the dance studio. During dance, they entered a world of more wholesome and rewarding experiences than was ordinary. As one dancer described, "Your mind isn't wandering, you are not thinking of something else; you are totally involved in what you are doing …. Your energy is flowing very smoothly. You feel relaxed, comfortable, and energetic" (p. 53). This might help to explain why problem behaviors were rarely evident in the after-school program at Lifelines even among students having behavioral issues during the school day. The combination of learning greater basic academic skills like reading and writing (especially for many students for whom English is a second language) and gaining greater aesthetic and kinesthetic abilities during encounters with the arts, served to bolster students' confidence. Teachers in the day program often described a sense of surprise and wonder at seeing a side of their students in the Lifelines program rarely seen in the day program—one of taking responsibility, initiative, and showcasing their significant skills (Hoxie in press).

There can be little doubt that coordinated efforts to promote an "art spirit"—in any sphere of human endeavor—is a powerful anecdote to boredom and disengagement with the process of schooling. We need only to make more available similar combinations of mentoring, autonomy support, civic engagement, community partnerships, and an authentic integration of academic and nonacademic learning opportunities as observed in these models of engaging after-school programs for engagement with learning to be, as Henri said, "the province of every human being."

High Quality After-School Programs as Models of Developmental Intentionality

The rapid rise in demand for and investment in after-school programming has also raised the question as to how best to use additional time after school. This chapter suggests the need for thinking about the after-school hours in terms of a comprehensive, broad vision for expanded learning opportunities across the developmental trajectory (Pittman et al. 2005). After-school programs supporting positive youth development usually possess *developmental intentionality* or the intentional focus on design and implementation to support the development of youth mainly by providing opportunities allowing youth to shape themselves (Walker et al. 2005). A theory of developmental intentionality holds that programs are the most effective when attention to long-term developmental outcomes *permeates every aspect of programming*. This may be the single most important principle separating engaging after-school programs from traditional in-school programming, and not surprisingly, the principle that empirically based whole-school models like Montessori and Glasser Quality schools (see Chaps. 10 and 11) have most in common.

Levin (2000) asserted, "The history of educational reform is a history of doing things to other people supposedly for their own good" (p. 1). However, as Walker and colleagues (2005) observed, "Time after time, young people have demonstrated that they come in all different shapes and sizes and want to be active determinants of their own shape" (p. 402). Programming guided by developmental intentionality strives to shape the learning environment and learning opportunities in order to meet the developmental needs of youth. Rather than to shape all youth into a predetermined adult ideal, the goal is to foster healthy growth in each individual's own direction.

Students' engagement is central to developmental intentionality (Walker et al. 2005). To be sure, engagement is the very opposite of apathy or lack of involvement and thus is a hopeful outcome of programming. However, the goal in designing effective educational programs supporting youth development is not merely participation but also for the participants to be focused and excited—that is, to have optimal experiences—in a set of ongoing, interrelated set of activities through which a multitude of developmental benefits are gained. Especially because after-school programs are voluntary, engagement is the essential ingredient for continued participation. Engagement is really the natural result of a good fit between the participant and the intentionally designed learning opportunities or environment; thus, this goodness of fit is the intentional focus of engaging program designs (Walker et al.). As Pittman and colleagues (2004) assert, "Consensus is emerging among the practice, research and policy communities that programming in the out-of-school hours can contribute to academic success by increasing student engagement in learning" (p. 23). In other words, programs are increasingly recognized as places where young people can develop a range of interest-driven skills and hobbies while engaged in arts, music, sports, and other areas contributing to their quality of life. This optimism extends to the belief that increased engagement is likely the driver of associated gains in school attendance, improved work habits and behavior, and positive attitudes towards school (Pittman et al. 2004).

In the tradition of Dewey (1938), youth benefit when their opportunities for engagement and learning are grounded in their everyday experiences, and when they are conceived as a cohesive whole rather than a compilation of fragmented parts (Walker et al. 2005). Research is now beginning to support the notion that programs designed with a positive youth development paradigm, as opposed to a staff-centered one, are more likely to engage participants in youth-led or project-based learning (Smith et al. 2010). In fact, the research suggests that provisions for students' basic physiological, emotional, and esteem needs provides a context where attention is available for higher order thinking and skill development (Smith et al. 2010).

In keeping with principles of engaging learning activities as discussed in Chap. 6, youth will likely continue voluntary participation only when a diverse range of activities are relevant to both their experience and their goals, and provides some measure of enjoyment. It is not an exaggeration to say that youth come to after-school programming for playing, acting, writing, drawing, and many other "ing" words signifying experiential, episodic learning of various skills in activities involving movement, rhythm, and motion. However, this is not the case for in-school programming, where students perceive the reason for attending to acquire prepackaged subject matter content and other equipment that parents and other adults believe they need to adequately participate in an adult world. Whereas quality programs are premised on developmental intentionality from their inception, most school programs are not. The relative absence of developmental intentionality for most in-school academic programming suggests that partnerships between OST and in-school educators are needed to intentionally create coherent and involving experiences for youth throughout the day. As discussed in Chap. 1, schools were actually modeled on something quite different: a model of industry, mass production, and centralization. If we merely extended the school day based on this model, we would be left only with "more school after school."

Alternatively, if we offered intentionally designed science-based, arts-based, and other discipline-based experiential, episodic, adult-supported learning opportunities throughout the day, youth will be likely to thrive in terms of their learning, talent development, and psychological well-being. In sports, for example, because individuals are mastery oriented, feeling competent when they develop their skills, they are more likely to commit to a continual developing and honing of skills (Nicholls 1989). The cultivation of motivation that sustains youth's continued interest is rarely considered when designing academic programming, however, perhaps because educators know that the populations they serve will inevitably form a "captive audience" by force (i.e., mandatory attendance).

Conclusion

As we move forward, it is also worth observing that the role of identity or personality development as interactive with engagement is understudied. Certainly, the field of science has recognized that "doing science" in a way that forges an identity as a scientist occurs as much in informal as formal educational settings (Rahm and Ash

2008). Similarly, Brophy and Leach (2010) found that for 74 % of their sample of history experts, the formative, catalytic experiences for developing a lifelong career interest in history occurred during childhood or before high school, in informal out-of-school environments; in-school experiences usually became more salient in their later development of history interest. All these examples of identity formation are really illustrations of the transition of small "e" engagement to capital "E" engagement as discussed in Chap. 1.

The models discussed in this chapter also suggest that it is important to consider the role of *setting* in engaging youth (Yonezawa et al. 2009). Although students can experience high engagement in or out of classrooms and schools, activities in the most engaging settings usually are not perceived merely as schoolwork or only as academic exercises completed for the purpose of being evaluated by an instructor. Learning in academic and arts enrichment contexts, especially compared to that reported in academic classes or homework help sessions, is highly engaging because it is often project based, relevant to the lives of youth, and includes fluid and ongoing feedback from peers and adults. In such contexts, participants find an authentic role and hold each other accountable in tasks that the group agrees has meaning (Yonezawa et al. 2009). In addition, opportunities to recognize student backgrounds and cultures often appear to play out with more success in after-school contexts, as even sincere attempts to do so can fail to be taken up in a meaningful and sustained way in the context of business-as-usual academic curriculum and instruction. In addition, relationships frequently play out in a more authentic way—one in which students, staff, and teachers get to know each other beyond the formal academic context, including students' families and lives outside of school.

Just like some of the whole-school models presented earlier such as the Montessori example (see Chap. 10), the after-school models presented in this chapter illustrate self-directed learners are motivated by flow, discovery, choice, and other intrinsic rewards. This type of learning thrives on active exploration followed by structured reflection (Walker et al. 2005). Intentional strategies to infuse and enrich opportunities for engagement and learning with academic content can help us to move beyond "more of the same" traditional academic models for both academic and nonacademic programming in schools. Such strategies include efforts to intentionally *embed academic content* into arts, sports, or service activities (Pittman et al. 2004). As with the Lifelines and Project Explore programs, extracurricular art programs in which students engage in studio work alongside adult artists or participate in archeological digs alongside scientists can provide powerful, rich, and real-world ways of meeting learning goals, especially when learning about cultural heritage along the way (Pittman et al. 2004). Another strategy is *enrichment* activities, which engage young people in authentic learning opportunities with innovative delivery and evaluation components, such as portfolios or other individualized assessments. Such activities were experienced much more positively than the traditional curricula, offering students the experience of challenge, deep concentration, and heightened motivation characteristic of flow experiences.

References

Brophy, J. E., & Leach, B. D. (2010, May). *Students interested in learning about history: What sparked their interest and what benefits do they derive?* Paper presented at the annual meeting of the American Educational Research Association, Denver.

Chi, B., Snow, J. Z., & Lyon, G. H. (2011, April). *How out-of-school programs effectively engage underrepresented students in science: youth development, science, and project exploration*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Perennial.

Deutsch, N. L., Wiggins, A., Henneberger, A., & Lawrence, E. C. (submitted). *Fostering connection: Mentoring groups as a context for relational development for early adolescent girls and their mentors*. Charlottesville.

Deutsch. N. L., Wiggins, A. Y., Henneberger, A. K., & Lawrence, E. C. (2013). Combining mentoring with structured group activities: A potential after-school context for fostering relationships between girls and mentors. *Journal of Early Adolescence, 33*(1), 44–76. doi: 10.1177/0272431612458037

Dewey, J. (1938). *Experience and education* (Kappa Delta Pi lecture series). New York: Collier Books.

Dubow, A. (2010). *Center for family life in sunset park.* http://www.cflsp.org/. Accessed 3 Nov 2011.

Eccles, J. S., & Midgley, C. (1990). Changes in academic motivation and self-perception during early adolescence. In R. Montemayor, G. R. Adams, & T. P. Gullotta (Eds.), *Advances in adolescent development: From childhood to adolescence* (Vol. 2, pp. 134–155). Newbury Park: Sage.

Eccles, J. S., et al. (1993a). Negative effects of traditional middle schools on students' motivation. *Elementary School Journal, 93*(5), 553–574.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., et al. (1993b). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist, 48*(2), 90–101.

Exloration, P. (2009). *Project exploration: Changing the face of science.* http://www.projectexploration.org/about.htm. Accessed 30 Nov 2011.

Hansen, D. M., Larson, R. W., & Dworkin, J. B. (2003). What adolescents learn in organized youth activities: A survey of self-reported developmental experiences. *Journal of Research on Adolescence, 13*, 25–56.

Henri, R. (1923/2007). *The art spirit*. New York: Basic Books.

Hoxie, A.-M. E. (2014). Engagement in out-of-school time: How youth become engaged in the arts. In D. J. Shernoff, & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbook by Teachers College Record.

Jones, J. N. (2011). *PeaceJam participation and youth experience: Preliminary findings from a research study in the Great Lakes PeaceJam region*. Kalamazoo: Western Michigan University.

Jones, J. N., Bench, J. H., & Warnaar, B. L. (2010, May). *The development of youth purpose through social action.* Paper presented at the annual meeting of the American Education Research Association, Denver.

Jones, J. N., Bench, J. H., & Warnaar, B. L. (2011, April). *Participation as relational process: Unpacking involvement in social action and community service*. Paper presented at the annual meeting of the American Education Research Association, New Orleans.

Lee, J. M., Germain, L. J., Lawrence, E. C., & Marshall, J. (2010). "It opened my mind, my eyes. It was good." Supporting college students' navigation of difference in a youth mentoring program. *Educational Horizons, 89*(Fall), 33–46.

Levin, B. (2000). Putting students at the centre of educational reform. *Journal of Educational Change, 1*(2), 155–172.

Leyton-Armakan, J., Lawrence, E., Deutsch, N., Williams, J. L., & Henneberger, A. (2012). Satisfaction and outcomes. Journal of Community Psychology, 40, 906-920. doi: 10.1002/jcop21491.

Lyon, G. H. (2010). *Project Exploration's personalized curriculum: Fostering access and equity in science in out of school.* Unpublished doctoral dissertation, University of Illinois at Chicago, Chicago.

Markowitz, E. S., Deutsch, N. L., & Lawrence, E. C. (2014). Balancing skills and challenges: Exploring the concept of relational engagement in combined group and one-on-one mentoring for adolescent girls. In D. J. Shernoff, & J. Bempechat (Eds.), *Engaging youth in schools: Evidence-based models to guide future innovations*. New York: NSSE Yearbook by Teachers College Record.

Nakamura, J., & Shernoff, D. J. (2009). *Good mentoring: Fostering excellent practice in higher education*. San Francisco: Jossey-Bass.

Nicholls, J. G. (1989). *The competitive ethos and democratic education*. Cambridge, MA: Harvard University Press.

Pittman, K. J., Irby, M. A., Yohalem, N., & Wilson-Ahlstrom, A. (2004). Blurring the lines of learning: The role of out-of-school programs as complements to formal learning. *New Directions for Youth Development: After School Worlds: Creating a New Social Space for Developing and Learning, 101*, 19–41.

Pittman, K. J., Tolman, J., & Yohalem, N. (2005). Developing a comprehensive agenda for the out-of-school hours: Lessons and challenges across cities. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after-school and community programs* (pp. 375–397). Mahwah: Erlbaum.

Rahm, J., & Ash, D. (2008). Learning environments at the margin: Case studies of disenfranchised youth doing science in an aquarium and an after-school program. *Learning Environments Research, 11*(1), 49–62.

Shernoff, D. J., & Vandell, D. L. (2007). Engagement in after-school program activities: Quality of experience from the perspective of participants. *Journal of Youth and Adolescence, 36*, 891–903. doi:10.1007/s10964-007-9183-5.

Smith, C. (2010, Fall). Youth program profile—project exploration. *Out-of-School Time Newsletter: A publication of the AERA Out-of-School Time Special Interest Group (OST SIG)*, p. 2.

Smith, C., Peck, S. C., Denault, A.-S., Blazevski, J., & Akiva, T. (2010). Quality at the point of service: Profiles of practice in after-school settings. *American Journal of Community Psychology, 45*, 358–369. doi:10.1007/s10464-010-9315-z.

Sovik, A., Lawrence, E. C., Deutsch, N. L., & Lee, J. (n. d.). *Designed for girls: Outcomes from a school-based mentoring program for middle school girls.* Charlottesville.

The After School Corporation. (2008). *21st Century Community Learning Center evaluation report*. New York: The After School Corporation.

Walker, J., Marczak, M., Blyth, D., & Borden, L. (2005). Designing youth development programs: Toward a theory of developmental intentionality. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after-school and community programs* (pp. 399–418). Mahwah: Lawrence Erlbaum.

Waranar, B. L., Jones, J. N., Bench, J. H., & Stroup, J. T. (2010). *Promoting the development of moral identity, behavior, and commitment in a social action program*. Paper presented at the biennial SELF Research conference, Quebec City.

Wenger, E. (1998). *Communites of practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press.

Yonezawa, S., Jones, M., & Joselowsky, F. (2009). *Youth engagement in high schools: Developing a multidimensional, critical approach to improving engagement for all students*. New York: Academy for Educational Development and UCSD-CREATE.

Chapter 14
Technological Innovations on the Horizon

Introduction

The current generation of college students is unique. They have been referred to as, "Millennials," "Generation Media," and "EchoBoomers" (Hollenback 2009). They grew up as children in the early part of the twenty-first century, born somewhere between the early 1980s and the middle of the 1990s. The predominant characteristic of this generation is that they not only utilize technology; they embrace it. They were the first generation to have a personal computer while growing up, not to mention Internet access in the home. Furthermore, many millennial students have developed a consumerism mentality about education. That is, they are inclined to see their education as an acquisition to be purchased (McGlynn 2008). This consumer mentality and an expectation of convenience only add to a desire for instant feedback and gratification unlike any previous generation. They may be more goal oriented, and also more impatient, than previous generations.

In the last decade, online learning has grown exponentially as an educational alternative to the classroom (U.S. Department of Education 2009). While online learning is frequently associated with higher education, it is estimated that by 2019 over 50 % of high school courses will be delivered online. In addition, new technologies for inside the classroom have emerged such as Audience Response Systems (ARSs) and interactive White Boards. Another educational tool that has grown exponentially is educational video games. Because we increasingly look to technology to engage youth, research focusing on engagement in these emerging technologies is discussed in this chapter. Technology increasingly represents the future of educational change, and each new technology presents new and unique opportunities for engagement as well as disengagement in learning. Any given new technology in and of itself is clearly not a panacea for engagement, and engagement may indeed be inhibited through them. Insofar as interacting with domain-specific tools is essential for deep engagement (as I believe), however, it is also clear that there are few more sophisticated learning tools than those that are computer based. Thus, computer-based tools may hold the potential for very deep levels of engagement.

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Research is beginning to show that when one is deeply immersed and in flow, as when riveted by a novel and likely many computer technologies is well, brain activity is stimulated in many parts of the brain, including those associated with affect (Thompson and Vedantam 2012).

In this chapter, we provide an entry point for discussion into (a) online learning, (b) Audience Response Systems, and (c) educational video games from the perspective of engagement in learning. As we shall see, research provides compelling evidence that the skillful integration of some educational video games and embedded technologies can set up optimal learning environments with a superior capacity to engage youth.

Online Learning

Online learning presents many new challenges for students and teachers alike. There are several economic reasons that its continued growth can be expected. For one, it provides a way to reduce costs, making it a more affordable alternative to classroom teaching. While the initial investment in developing online courses is labor intensive, and teaching such courses is far from easy, once created, course maintenance is reduced to monitoring and updating. Secondly, it can overcome geographic constraints in reaching wider or more distant audiences. In fact, increasingly institutions of higher education are subjected to an additional layer of competition through online learning, thereby making development of online courses a survival strategy. Thus, instructors are increasingly encouraged to develop online versions of their traditional courses. Courses can be offered completely online or as a combination of web-based and face-to-face classes (hybrid or blended courses).

In high schools, many students who sign up for an online course are sufficiently confident, motivated to complete the course, and technologically competent. From the perspective of motivation or engagement, however, there are some large differences between online learning and classroom learning. In seeing one's instructor and peers face to face, students can observe many socially mediated cues that regulate the pace of learning, expectations, and the "culture" of the class. This includes the instructor's feedback to one's own and others' work. These opportunities to evaluate one's academic progress in the context of the whole-class environment may be the chief mechanism for successfully self-regulating both learning and academic success in the course.

In online learning, this self-regulatory environment goes out the window. It becomes the student's responsibility to interact with the course. The nature of the interaction is confined to the two-way transaction between the student and the online course/instructor rather than a whole social environment. To the extent that there is peer interaction, it is usually not synchronous, does not allow for visual information, and generally does not include feedback from the instructor to other students. In the online environment, progress is measured by advancement through the course, grades for submitted work, and direct instructor feedback. To succeed, the student needs to autonomously generate a plan and autonomously follow it.

However, social comparison information is generally not available, and difficult to get from discussion boards or e-mails. Since much of the motivational literature associates social comparison with extrinsic and other forms of motivation detrimental to intrinsic motivation, an initial read might be that the lack of social comparison information is a motivational positive. And for some students, it is for sure. However, we also know that flow theory emphasizes the importance of readily available performance information; thus, for other students, the lack of feedback can create a motivational vacuum. Experts in self-regulation in fact argue that students in traditional education have been trained to be reactive rather than proactive (Zimmerman 2008). Students who have developed a behavioral pattern of following their peers more so than attending to direct instructions may feel at a loss to know what to do or what to prioritize. And they may attribute success or lack of success to erroneous reasons.

Thus, while online learning is undeniably more autonomous than most classroom forms of learning, one is hard pressed to say it is a more engaging learning forum for most students; most students have not obtained sufficient self-regulatory capacities for this to be the case, and in fact may lose motivation due to the significant absence of feedback and real-time social interaction. Students may procrastinate, with few external cues to log in at all, which is distinct from classroom learning (i.e., "it is time for class"). Without classes, and hearing less about assignments before attempting them, students may underestimate the time it takes to complete their assignments. Students with many competing priorities, or poorly organized students, may in fact never make a plan or perform any of the tasks. In this case, there may be little reflection, and instead only confusion, helplessness, and hopelessness. Scaffolding and other intentional strategies to sustain motivation and self-regulation is key to making online learning experiences engaging for a higher percentage of students (Newman 2002). Thus, online learning has the potential to become significantly more engaging where it incorporates supports for key self-regulatory processes, or at least compensates for self-regulatory voids.

Targeting weaknesses in self-regulatory ability is an important strategy of online course design. For example, courses might begin with assessing students' self-regulatory abilities as well as interests and the ways students become motivated to learn. There are numerous online tools including assessments of learning style, polls, and surveys that can be used for this purpose. This could be preceded by empowering students with additional tools to promote goal setting and strategizing, concurrent with providing continual self-monitoring systems for students to graph or chart their progress on goals. Levels of self-regulatory supports, such as authentic assessments, scaffolding, intermediate assignment deadlines, prompts, and clear feedback, might be differential based on students' needs. Ongoing performance assessments followed by timely, individualized feedback are critical to compensate for the lack of feedback information compared to a live, face-to-face environment. Personalized and nonverbal feedback can be provided via voice recordings instead of only written comments. In addition, assignments might offer reflective components that allow students to analyze their own perceptions, what was learned, and what remains to be learned. As students become better self-regulators, they should be more inclined to persist in the face of challenges or obstacles.

In addition, there are several ways in which online learning can increase constructive and engaging learning experiences. The first are varied online learning tools to increase collaboration, exchange of ideas, or exploration. These may include virtual conferencing; synchronous and asynchronous discussions; WebQuests (i.e., inquiry-oriented explorations of a topic using Web-based resources); and the creation of authentic virtual spaces for creating and sharing information, including wikis, blogs, and websites.

An increasingly common format is "blended courses" which have both an online and in-class component. An important strategy for blended courses is to allow the online component serve as the dispenser of base information, stacking it with videos, readings, and lectures or lecture notes, in order to free up the classroom time to be more interactive than it might have been otherwise. This approach plays to the strength of online formats as a fountain of information that allows individuals to conveniently access that information on their own time and on their own terms. It also takes advantage of more constructivist approaches by freeing up in-class time to be more for collaborative and knowledge-building activities.

Audience Response Systems (ARSs)

Despite the technological revolution and Information Age in which the current generations of students are living, one context that has shared in remarkably few of the technological innovations available is the classroom. There are some notable exceptions, however. For one, the use of an Audience Response Systems (ARSs), also known as "clickers," has steadily grown as evidence of their pedagogical effectiveness has accumulated. Not only in large university courses but also in secondary, middle school, and elementary courses, instructors across the country have turned to clickers: remote keypads (about the size of a TV remote control) that students use to answer the instructor's question, in order to foster student engagement and other positive outcomes (Barber and Njus 2007). In use, ARSs resemble the "Ask the Audience" portion of the game show, "Who Wants to Be a Millionaire," enabling instructors to poll the class on a question (usually multiple choice) and instantaneously display the distribution of the results on a projection screen where students can see and discuss them (Caldwell 2007).

Responses made from clickers are sent via infrared or radio frequency to a receiver attached to the classroom computer, which computes aggregate responses and displays histograms with specialized software, transmittable to the class via an LCD projector. The data is also stored within the ARS software (there are numerous manufacturers of ARSs), most of which can generate a variety of reports for analysis. Instructors have posed questions to the class for as long as time, it seems, but the ARS dramatically improves the traditional scenario in which most students passively watch as only one student responds, or worse, the instructor answers his or her own question after a brief pause. In many classes, those willing to respond can be the same few students; with ARSs, all students feel safe doing so because responses are

anonymous. The results from ARS questions provide simultaneous feedback to both the instructor and the students. Therefore, they can provide an immediate and formative assessment measure for the instructor, who learns how much of the class understands a fact, concept, or application, and can often get a good clue as to the source of misunderstanding. When understanding is shaky, the teacher can reteach and/or the class can break into a discussion for clarification and review. Students get feedback on how well they know the material, and how their understanding falls in line with the rest of the class. Clickers can also be used to stimulate cooperative learning and problem solving. When it is used for these purposes, it can enhance interest and learning (Caldwell 2007; Preszler et al. 2007).

The feedback functions are clearly synergistic with both student engagement and learning (Bangert-Drowns et al. 1991; Guthrie and Carllin 2004). Consistent with flow theory, feedback can enhance learning when it is relatively immediate and constructive in nature, as well as appraisals of one's learning (Guthrie and Carllin 2004). The feedback loop among students and the instructor that is created can facilitate group interaction and even a sense of "group flow" (Shernoff and Csikszentmihalyi 2009). Student-centered performance feedback is integral to self-regulated forms of learning consistent with constructivist principles (Stiggins 1999). Minimally, the instantaneous feedback is highly compatible with the learning style of "Millennials" who are accustomed to instantaneous information. More importantly, however, ARSs overcome several of the main reasons that students become apathetic, detached, and "dodgers of considerable skill" (p. 162), according to Sizer (1984)—first, that students ordinarily are not *required* to be engaged; and secondly, that students are generally unwilling to risk failure in front of the entire classroom.

Uses of ARSs vary widely. They are used in classes covering nearly any topic ranging from 15 to 200 students of nearly all ages, from K-12 students to advanced graduate students. Indeed, research on ARSs has been used across a great number of subjects (Caldwell 2007). Their instructional purposes are limitless, but they include spicing up standard lectures with periodic breaks for questioning, assessing student opinions, increasing the degree of interactivity in large classes, and prompting cooperative learning activities. To increase interaction, as one of many examples, an instructor might use clickers to collect votes for starting a discussion, which requires the involvement from all students (Caldwell 2007). For those interested in psychology or educational psychology, clickers can monitor human response. For example, it could be used as a quiet substitute to a "clinometer" to gauge the students' level of confusion, engagement, or other such construct similar to the Experience Sampling Method. Many university instructors have used them to compensate for the passive, one-way communication of lecturing formats; and many universities have adopted ARS technology campus wide to make classroom interaction more personable and less passive for students. Research supports the need to break up lectures to improve learning. Studies show that human attention for presentations is not strong after 20 min, with recall of presented information the strongest in the first 5 min, and dropping after 15 min (Burns 1985). This suggests that the later parts of longer presentations may be lost on students without breaks for interactivity.

Instructors and students who have used ARSs are generally positive and enthusiastic about their effects in the classroom. Most instructors believe that students pay better attention when using them, and are more eager to discuss controversial issues. I include myself in this category. I have used clickers in my undergraduate course in Adolescent Development for 4–5 years now, and I noticed a definite improvement in the quality of classroom engagement. While this is my subjective impression, I have surveyed students about their experience with ARSs every semester, and they have responded roughly 90 % positively, which I have found all the more remarkable given that I have used it mainly as an impromptu quiz throughout presentation of materials. I believe the game-like quality and element of surprise supersedes typical dread for quizzes and tests. However, I try to promote a spirit that clickers are for fun and engaged learning, and not to "catch them" messing up. One way I do this is by making many of the questions about the material just discussed, such that they could get the question correct simply by being engaged and paying close attention (They can also get all questions right from a careful reading of the reading assignment). To promote a sense that clickers are not unforgiving, I also allow partial credit for incorrect answers; to achieve a similar effect, another option is to drop a handful of low scores. Because questions asked through clickers are intended for all students, a higher percentage of the class is likely to be responsive to questions and discussions held without clickers.

While the multiple choice nature of the student responses may appear limiting, there is a great deal of flexibility in how even multiple choice questions may be used in a class. In addition, as text messaging becomes increasingly popular and the number and type of devices to send them abound, it is inevitable that students will have the technology necessary to provide more open-ended and nuanced responses. The real difficulty is the instructor's ability to process those responses quickly and efficiently. Although there is no trouble with such responses entering a database for later inspection and analysis, instructors may prefer to use multiple-choice questioning (e.g., surveys) as an entry into a deeper discussion that can be held by small groups of students face-to-face during class time.

Research Findings on ARSs and Their Effect on Engagement and Learning

A plethora of articles now discuss the uses, benefits, and outcomes of clickers, and several good reviews have been conducted (Caldwell 2007; Duncan 2005; Plass et al. 2011; Simpson and Oliver 2007). Most reviews concur that clickers help to improve outcomes including exam scores or pass rates, student comprehension, and student attitudes. Clickers have been widely reported to increase and normalize (i.e., make less erratic) attendance, particularly when performance is linked to grades (Caldwell 2007; Dede et al. 2005). Clearly, one of the most important benefits of ARSs is improvements in learning. Among the greatest of the benefits is evidence of greater comprehension and test results. Studies have also found improved achievement on

exams in a variety of subjects (Caldwell 2007). They have also been observed to increase the percentage of A grades, decrease the percentage of low grades (i.e., D's and F's), and decrease the percentage of withdrawing (Caldwell 2007).

One recent study found that using clickers improved attendance, interest, and understanding in six New Mexico State University biology courses (Preszler et al. 2007). Eighty-one percent of students across all courses agreed or strongly agreed that using clickers increased interest in the course, and only 5 % disagreed. One foundational, controlled study of ARSs revealed that just receiving questions rather than statements in concert with PowerPoint slides of course material stimulated more positive attitudes, enjoyment, and better learning. Campbell and Mayer (2009) presented a 25-slide PowerPoint lecture to two groups of participants. For the treatment group, five of the slides contained a multiple choice question; and for the control group, the same five slides contained the same information related as a factual statement. The treatment group responded to the question via ARS, upon which they were provided with the correct answer and explanation. The control group received the same explanation accompanying the factual statement. Results of the study showed that the treatment group believed that participating in the ARS helped them in their understanding, and made the lecture more enjoyable. On a short content test that followed the lecture, the treatment group performed better on open-ended questions but not short answer or multiple-choice questions, suggesting that the ARS may have contributed not to a better factual understanding, but to a deeper level of processing the material. Other studies suggest that simply the practice of answering content questions improves later test performance, with some classes improving from 16 % correct to 100 % correct after as little as three practice questions (d'Inverno et al. 2003).

Another key benefit of using ARSs is increasing the frequency with which the teacher can engage the class in *formative assessment*, which refers to all activities teachers and students can use diagnostically to alter teaching and learning in order to meet students' needs (Black and William 1998). This means that teachers can use the students' response information to make instructional adjustments, such as reteaching, changing the course of the lesson, or allowing more opportunities for practice to improve student success. While this requires a certain amount of thinking on one's feet, instructors who take this approach offer assurance that it becomes easier with practice (Beaty 2004). Using clickers can also help to assure content is well understood before moving on, guarding against the possibility of building on top of poorly understood concepts or ideas. To use formative assessment effectively, it is suggested that instructors ask nonobvious questions and focus on the students' reasoning process rather than on only the correctness of their answers (Caldwell 2007).

One of the most agreed upon benefits of using ARSs is an enhancement of student engagement (e.g., van Dijk et al. 2001). Because clickers can change the atmosphere of the class to a more student-centered one, instructors frequently corroborate my observation that by using clickers many students become more active participants in general, asking and answering more questions and offering more informed or creative perspectives (Novak et al. 1999; van Dijk et al. 2001). A widespread belief is that if students are personally and emotionally invested in a question, they

are more likely to attend to the discussion that both precedes and follows it. Studies have also corroborated my observation about enjoyment: 88 % of students say that they frequently or always enjoy using clickers, with most students agreeing that it helps them to concentrate (Caldwell 2007). Students confirm particularly liking the anonymity, as well as knowing how their performance compares to the rest of the class (Beaty 2004; Bunce et al. 2006). They also report that the experience of being quizzed is much better through clicker technology than paper and pencil because they get to find out if their answers are correct immediately (Caldwell 2007).

Through using ARSs, students come to realize that other students think both differently and similarly, and that they are not the only student in the class who knows or does not know a concept (Caldwell 2007). It can serve as a "reality check" for students who are not keeping up with the material and would like to think they are not behind the rest of the class, and as a confirmation of students who are sincerely working hard to learn in the course. In general, students believe that using clickers is fun and livens up the class; and instructors find students to be more alert and responsive. Not all students like using clickers, however. Those who don't often report technical difficulties, lack of instructor experience using them, the taking of class time to use them, and the "forcing" of attendance taking (Halloran 1995; Mayer et al. 2011).

Certainly, time spent using ARSs reduces a certain amount of time that might have been spent covering the material, even if this loss of coverage time is generally considered to be more than compensated for by advances in comprehension, attendance, and engagement. However, clickers can also offer an interesting way to "cover" the material. Because being regularly quizzed holds all students accountable for class preparation, more students are likely to read the material. They understand that less material will be covered in class to make time for the ARS questions, as opposed to the typical college crutch for nonreaders in which *all* important (read: testable) material is covered in class. If quizzing through clickers is effective in promoting all students to learn the material through independent study, this actually frees class time for more productive or interactive forms of pedagogy than focusing only on coverage (Mayer et al. 2011). The shift toward less direct instruction in class can be bolstered further by providing students with outlines or transcripts of lectures that are not covered in class (Burns 1985; d'Inverno et al. 2003), or even warm-up exercises on content basics so that class time can be used for higher order applications (Marrs and Novak 2004; Novak et al. 1999). Thus, less time on coverage and more time spent actively engaged in cooperative learning and group processes could be another mediator of enhanced student understanding (Draper et al. 2002).

Other research suggests that keys to engaging the class with clickers include careful planning around goals, attendance, communicating with students about their use, managing grades and anxiety, and peer learning techniques (Caldwell 2007). For example, instructors are advised to make sure clicker sessions align with learning goals, and have plenty of backup clickers and batteries. To increase attendance, instructors are advised not only to use clickers daily and link attendance taken through them to students' grades, but also to allow students to track their grades to reduce anxiety. One point for communication is to let students know that cheating is not acceptable; otherwise, it has been my experience that students feel more comfortable

looking at their notes and each other's clickers due to the open and less formal nature of the clicker sessions compared to paper-and-pencil quizzes or tests. In terms of writing effective ARS questions, it is suggested that instructors focus on concepts that address specific learning goals rather than details to be memorized (Beaty 2004).

Among the most thoughtful prescriptions for clickers revolve around engaging students in peer collaboration. Peer learning with clickers has attracted attention because it has been demonstrated to result in better performance on exams than traditional approaches to course material such as lectures, particularly on higher-level exam questions (Caldwell 2007). There are several approaches to peer learning with clickers. For example, the class can break into small groups in order to try to answer an ARS question collaboratively, followed by a large group discussion. Another approach is to ask a clicker question and allow students to answer individually and see the distribution of questions as normal, and then spend time in peer groups striving towards consensus. Alternatively, questions may be designed without any correct answer simply to facilitate lively debate and discussion. Students believe that this sort of peer interaction is helpful. One study found that 92 % of students agreed that the discussions aided in their understanding, 82 % agreed that hearing other students' explanations helped them to learn, and 90 % reported that the part of the class that they were the most engaged was during the peer interaction (Beatty et al. 2006).

We now turn to engagement in educational video games and other computer-based tools for learning.

Educational Video Games

Video games have become enormously popular among adolescents within the last 20 years, with adolescent youth in the United States spending more than 1 h per day playing them on average, and the vast majority owning at least one video game (Roberts et al. 2005). The past decade has witnessed great interest in the potential of educational video games and computer-based simulations to enhance motivation and learning. Computer-based games can be highly engaging, and educators have suggested taking advantage of the motivational properties of video games to promote learning (Gee 2007; Squire et al. 2005).

Indeed, it is argued that educational video games can encompass contemporary educational theory and some of the best practices in education today (Collins and Halverson 2009; Gee 2007). For example, scholars have urged educators to consider some unique advantages of video games for engaging students in deep, meaningful learning experiences (Gee 2007; Federation of American Scientists 2006; Shaffer 2006). When playing a video game, individuals are said to "plunge into it," and to be "immersed" or "enveloped" by it (Scoresby and Shelton 2007). They have no need for a manual. The goals of the game are clear. Players understand why what they are learning is important, and there are immediate opportunities to apply what they have learned. Feedback as to whether they are achieving the goals is

immediate, abundant, and unambiguous (Coller & Shernoff 2009). Players are able to achieve initial success fairly quickly, but challenges intensify progressively to keep players at the edge of their abilities. Therefore, time on task is neither mundanely repetitious nor overwhelmingly difficult, in keeping with a moderate to high level of challenge recommended by educational psychologists to sustain motivation (Schunk et al. 2008). Other highly motivating characteristics of video games include risk taking in a safe environment, escapism and fantasy, and active "learning by doing" (Aldrich 2005).

Studies applying flow theory to the classroom setting have found that students are most engaged in activities that are, in a sense, *game-like*: those that are perceived to have clear and relevant goals, offer appropriate challenges for students' skills, and provide immediate feedback (Coller and Shernoff 2009). Perhaps not surprisingly, flow theory has been the natural theoretical base for exploring the implications of learning through immersion or "being enveloped" by a virtual learning environment, as the emotional composition of these experiences resemble flow and precipitate a deeper engagement with learning. Several researchers have linked the sense of "presence," "being there," or "immersion" in different virtual reality interfaces typifying flow to positive learning outcomes (e.g., Hedley et al. 2002; Witmer and Singer 1998).

Engaging Students in Engineering Education with an Educational Video Game

Using flow theory as a theoretical base, Coller and I recently completed a 3-year, quasi-experimental study assessing the motivational effects of using a video game approach to teach the required undergraduate mechanical engineering course, *Dynamic Systems and Control* (DS&C), at Northern Illinois University (Coller and Shernoff 2009; Coller et al. 2011). In the study, we compared the engagement, emotions, and quality of learning experiences of students who took the undergraduate engineering course that used a video game approach to a separate cohort of students who took the same course utilizing a more traditional approach that relied on textbook problem solving, simple laboratory experiments, and simulations with standard engineering tools.

In the course, students learned how to make machines run autonomously. Familiar examples of this in automobiles include cruise control, antilock brakes, traction control, and automatic parallel parking. Control systems play integral and indispensable roles in modern technology. Nonetheless, because of the difficult and abstract mathematics, mechanical engineering students tend not to be intrinsically interested in the theories and principles included. According to Shaffer (2006), video games have the advantage of placing students in simulated environments where they face authentic, open-ended challenges similar in nature to those faced by real-world professionals, making similar professional judgments without the real-world risks. We specifically tested the effects of a video game approach to teaching DS&C on students' engagement and emotions compared to the traditional approach relying primarily on solving problem sets from a textbook.

The Study

In spring 2007 (Year 1), DS&C was taught in the traditional way: from a textbook, supplemented with laboratory exercises (control condition). In spring 2009 (Year 3), the video game, *EduTorcs* (For a demonstration, see http://www.youtube.com/watch?v=LYGwaI-haOM), was utilized to anchor course instruction (experimental condition). Dr. Brianno Coller, associate professor of mechanical engineering at Northern Illinois University, created the video game and taught the course both years. The sample ($N=96$) consisted of the students who took the course in Year 1 ($n=50$), and those who took the course in Year 3 ($n=46$). Twelve percent of the participants were female. Fifty-eight percent were Caucasian, 14 % were Asian, 4 % were African-American, 3 % were Latino, and 21 % were of mixed ethnicities. At the beginning of the semester in both years, participants completed an exam in basic mechanics concepts to assess prior levels of knowledge, and surveys assessing learning styles, digital game use, and engineering interests. They also provided demographic and background information.

The video game, *EduTorcs*, is similar to commercial video games in which players race a car around a track. Unlike a traditional commercial video game, however, students did not have steering wheels, gearshifts, accelerator, or brake pedals to manipulate their car. Instead, each student needed to write a C++ computer program to give the car its driving commands: how much to step on the gas and brake pedal, which gear the transmission should be in, and how much to turn the steering wheel right or left. The driving program queried important information, such as the car's distance from the center line of the track, the heading angle of the car relative to the local heading angle of the track, vehicle speed, and distance from other vehicles. Students learned and implemented feedback design techniques to design steer controllers, lane-change controllers, cruise controllers, and car-following controllers. Later in the course, students developed controllers to balance bicycles and motorcycles within the video game.

Students' experiences and emotions were measured with the Experience Sampling Method (ESM). Participants wore a pre-programmed digital wristwatches over three separate 7-day periods: in the beginning (Wave 1), middle (Wave 2), and end (Wave 3) of the semester, for a total of 90 alarms or "beeps." In addition to recording their location, activity, emotions, and engagement when signaled, a customized Experience Response Form also asked participants to identify the course in which they were working (if schoolwork), and any technology that they were using (with a check-off for *EduTorcs*). Because we were particularly interested in engagement while students were working on homework and labs, beep schedules were designed to maximize beeps during those times but were otherwise randomized.

We focused our analyses on the 657 self-reports in which students indicated that they were completing homework or working on a lab assignment for DS&C. The 657 surveys were nested within the 96 students in the sample. Factor analyses of participants' reports of engagement and emotions were used to create the following composites: Intrinsic Motivation (e.g., choice, control, wishing to do the activity); Intellectual Intensity (e.g., importance, challenge, use of skills); Positive Affect

(e.g., feeling happy, creative, active); and Negative Affect (e.g., feeling stressed, irritated, worried). An Engagement variable based on flow theory again averaged students' concentration, interest, and enjoyment. Reliabilities of the composite variables ranged from 0.73 to 0.80.

Results and Findings

The students taking the game-based course in Year 3 were significantly more engaged than the students in Year 1 (not game based) during homework and labs (the main time that students worked with *EduTorcs* in Year 3) (Coller et al. 2011). Year 3 students also reported significantly higher Intrinsic Motivation and Positive Affect, and significantly lower Negative Affect. In addition, Year 3 students also reported that their homework and lab activity was "like work" significantly less frequently than Year 1 students (41 % compared to 76 % of the time), but felt "like work and play" significantly more frequently (50 % compared to 15 % of the time). *T*-values ranged from 3.05 to 5.91; $p < .001$ except for engagement ($p < .01$); and the percentage of between-person variance accounted for by the experimental condition (i.e., Year 3 vs. Year 1) ranged between 23 % and 63 %. Although the difference in Intellectual Intensity between the experimental and control year was not significant, separate analyses showed that Year 3 students reported higher Intellectual Intensity when completing homework and labs with *EduTorcs* than when they were completing labs and homework without playing the game. In addition, those with high prior engineering knowledge were more likely to be engaged, while those who played video games frequently were less likely to be engaged when working in *EduTorcs*. These differences may be partially explained by the observation that *EduTorcs* is unlike commercial video games, but rather relies on deep knowledge of engineering. The goals revolve around exploring, tinkering, and figuring out how things work, (see Coller et al. (2011) for full results details).

Overall, the study suggested that a video game approach can be effectively implemented into mechanical engineering instruction to simulate real-world professional practice and foster optimal engagement in the learning process. Students experienced higher engagement, intrinsic motivation, and more positive affect when working with *EduTorcs* compared to the traditional approach to homework and lab in the DS&C course. By also reporting that their experience doing homework and labs felt like work and play more frequently than students who took the course in the traditional manner, students appeared to be engrossed in a high level of flow and engagement with learning through "serious games."

The learning gains made by students taking the game-based course were equally impressive. Student who took the game-based course scored almost a full standard deviation higher after accounting for control variables ($\beta = 0.94$) on exams measuring competency in course material given at the midpoint and at the end of the semester, large effect that was statistically significant at $p < .001$. The treatment condition accounted for 43 % of the variation in exam scores among students. There was a significant effect of both perceived skill use and perceived integration of work and

play while doing homework and lab activities on course performance. The feeling that the task is like both work and play is characteristic of flow and *meaningful engagement*. In fact, when working in *EduTorcs*, students experienced higher levels of *concentration*, *interest*, and *enjoyment*—emotional ingredients central to the concept of *immersion* and *flow in* video games specifically (Scoresby and Shelton 2007), and optimal learning in general.

Flow and engagement in simulated practice may be a central ingredient to fostering superior development of real-world competencies of a new profession; the ideal of immersion in a "community of practice" (see Chap. 13 for a definition) for the learning of domain-specific or early career knowledge appeared to be modeled very well. One way in which it was modeled was the unconventional social arrangement of the course, in which the social foci of the course was each individual performing at his or her highest level to optimally regulate the car, with each individual comparing notes with other individuals likewise engaged. By defining the rules carefully, so that creative strategies are rewarded over formulaic ones, a system of meaning making requiring students to think, value, and act like professionals was fostered by the video games.

Overall, the findings were highly suggestive that something special was happening in Coller's experimental class. And this was consistent with his personal observations that he had never seen so many students eager to learn and take on difficult challenges as he did when they were working with *EduTorcs*. Clearly, *EduTorcs* was highly engaging, enhanced learning, and provided an effective career training opportunity.

We now briefly describe several other applications of engaging educational technologies.

Other Examples of Learning Through Technology-Supported Instruction

The AquaRoom

Another highly innovative application of video games for a specialized professional practice is the AquaRoom, a science inquiry unit for classroom learning (Larson and Hansen 2005). Students are invited to imagine that the classroom is a small town within which an industrial plant is to be built, and their task is to recommend a construction site to the town's mayor. Although the plant is providing much-needed jobs for the community, there is concern that the caustic chemicals coming from the plant could penetrate a series of aquifers beneath the town and pollute the drinking water. The AquaRoom is a collaborative spatial simulation that situates a virtual network of aquifers running beneath the classroom floor, thus engaging students in the practice of hydraulics. To simulate drilling operations injecting subterranean dyes and retrieving samples at identified locations around the classroom,

students use customized tablet computers (i.e., including an iButton reader, Ethernet port and cable, and suction cup) as portable "drilling units." They also use a desktop computer as a simulated spectrometer to make a "spectroanalysis" in order to identify the layout of the underground water system and the direction of flow of groundwater streams. This must be an example from higher education, right? Actually, the AquaRoom is designed for upper elementary school learners.

The AquaRoom is an example of an "embedded phenomena" design framework (Schweinle and Helming 2011) in which whole classes conduct multiweek investigations of simulated scientific phenomena that are "mapped" onto the physical space of the classroom. In this framework, the simulated phenomena (in this case, the imaginary town and flow of water through the aquifers beneath the classroom) shares the same space as the occupants of the classroom, but is presented as ongoing in time, independent of other classroom activities. The intentional hope of embedded phenomena design is that by positioning artifacts as resources for action in real time, rather than merely representing the phenomena and associated data, an element of play is introduced to engage learners in actual scientific practice. Other applications of embedded phenomena include a population ecology unit called WallCology, in which computer displays set upon the classroom wall purport to provide a window into an active ecosystem with animations of creatures crawling along pipes and boards just beyond the plaster (Thompson and Vedantam 2012; Wigfield et al. 2006); and a seismology unit called RoomQuake, in which computer displays simulate seismographs registering nominal ground movement in various parts of the room (Fischer et al. 2011; Moher et al. 2010).

A pilot study testing a 3-week AquaRoom intervention was conducted in a fourth-grade elementary classroom with 21 students in a diverse, middle-class school district (Larson and Hansen 2005). The study revealed that students conducted 39 dye insertions and extracted 281 water samples over the course of the unit. Participation rates were high and almost all students were observed to be highly engaged in the activities. Enthusiasm was described as strong, with students vocalizing their displeasure when the unit came to a close. The students enjoyed using and taking care of the scientific technology made available. Almost all students stated that they believed using drilling equipment had high play and utility value.

Pedagogically, the embedded phenomenal framework is broadly derived from the theoretical orientations of situated learning (Brown et al. 1989; Rogoff 1990) and communities of practice (Wenger 1998). The theoretical ideal is to generate authentic scientific investigations to socially construct both science concepts and the practice of science as both a technical and human endeavor. As with *EduTorcs*, students move from the periphery of professional practice to more central roles (Lave and Wenger 1991). A wealth of empirical work involving in-depth investigations of technology-supported inquiry learning in science has shown that engaging in authentic science practice facilitates understanding, motivation, and interest in science (Krajcik et al. 1998; Lee and Songer 2003; Linn et al. 2006; Smith and Reisner 2005).

This is not uniformly true, however. Some studies have found the students have performed the same or even better through traditional methods than through computer games. In one study, for example, students learned how to diagnose human disease by playing a narrative computer game called Crystal Island or by watching

a PowerPoint presentation using identical words and graphics (Mayer et al. 2011). Students in the slideshow group performed significantly better on tests of retention and knowledge transfer, and also indicated less difficulty learning. This demonstrates that the technology alone is likely not what is engaging, and in fact can distract from learning or make it more difficult. In all likelihood, models stimulating high engagement like *EduTorcs* and the *AquaRoom* are highly immersive due to a pedagogical design to promote inquiry and intrinsic motivation during authentic, socially mediated practice in which educational technologies were primary, discipline-specific tools.

Globaloria: "Program or Be Programmed"

With the advent of a variety of interactive and networked game-making tools, the potential now exists for individuals of all ages to create interactive and educational video games (Reynolds and Caperton 2011). In his book, *Program or be programmed*, Rushkoff (2010) argues that not only using programs but also writing them will become an increasingly important form of literacy in the digital area, with programmers having an important role in shaping our world. Presently, however, most schools and teachers are underprepared and lack the expertise and resources to help students learn to command new digital technologies. Could teaching students of various ages how to program and write video games be achieved on a wider level?

Supported by the World Wide Workshop Foundation in New York City, Globolaria-West Virginia (www.globaloria.org) is an educational pilot program seeking to do just that—teach cohorts of students how to program in order to create their own video games (Reynolds and Caperton 2011). Globaloria partnered with the West Virginia Governor's Office of Technology to develop a collaborative game design and social media learning among teachers and students in West Virginia's most economically and technologically disadvantaged areas. Since many teachers begin the program as relative novices to programming tools, the program employs a "co-learning model," meaning that students and educators learn together.

Here's how it works. Schools offer a game design class for graded elective credit. The World Wide Workshop and Globaloria provide participating schools with a guided, inquiry-based curricular program for collaborative game design and distribution; digital learning supports using a wiki-based social media platform; biannual teacher trainings; ongoing virtual webinars; and a variety of technological resources to support game design. The program is semi-structured in that sometimes learning is self-led, sometimes expert guided, and sometimes facilitated by working with peers both in person and online. Each school's wiki provides the syllabus with links providing access to a set of online activities and tutorials. Guided by teachers and Globaloria experts, students typically learn game design topics in Semester One, and game development topics in Semester Two. Teachers develop a schedule and assign deadlines (Reynolds and Caperton 2011).

Pedagogically, the program is based on constructivist ideas in which the learning process is made explicit; there is an open sharing of ideas, free interaction, and

expert mentoring. Student reflection and expression about their work in progress, knowledge sharing, and collaboration within a community of practice is also emphasized (Reynolds and Caperton 2011). A discovery-based learning design is employed in which the project is semi-structured, requiring some degree of student initiative and reflection, and scaffolded to meet students' needs by educators (Hmelo-Silver et al. 2007). Students also enact Wenger's (2003) conceptualization of realistic imaginative activity in that students take on professional roles of game design teams such as programmer, designer, researcher, and project manager (Reynolds and Chiu 2012). Most Globaloria educators allow students significant freedom to choose the topics of their games around their individual interests. Students generally design games that are educational (i.e., games about math, science, or civics), have a message about social issues or social justice, or are purely for entertainment or fantasy. Students then upload and share their assignments and files on profile and project webpages for educators to review (Reynolds and Caperton 2011).

In their study of student engagement and meaning making among 199 Globaloria participants, Reynolds and Caperton (2011) asked several open-ended questions about students' experience with the course and coded them into categories by frequency. They reported that the most common answer to the survey question, "How is the game design course different than your other courses?" other than using the computer more, was that it was fun and not boring. Other frequent responses testifying to students' engagement were that it involved self-directed learning, teamwork and cooperation, and experiential learning. Suggestive of a flow orientation, they also commented that it was hard/challenging but also relaxed and not as pressured. Students reported several challenges of the program as well. A substantial proportion found the course to be frustrating or confusing at times, and struggled to manage their time. On balance, however, it appeared that students found overall learning environment to be relevant, motivating, fun, and challenging. Suggestive of meaningful engagement, students suggested that the experience was "hard fun" (Reynolds and Caperton 2011).

In a follow up study of 386 Globaloria participants, Reynolds and Chiu (2012) tested the hypothesis that those with an intrinsic motivation orientation towards game design would thrive to a greater extent in the generally autonomy-supportive learning environment, in line with Ryan and Deci's (Deci and Ryan 1985; Ryan and Deci 2000) self-determination theory. They found that, indeed, more intrinsically motivated teams learned how to write programs of higher quality, suggesting that the autonomous and discovery-based nature of the program may be more effective and feel more supportive to participants with intrinsic motivation orientations, whereas students with less intrinsic motivation may need additional structure to feel optimally supported.

Conclusion

Increasingly, newer generations of students will be technologically savvy and consumer minded regarding how they obtain information. Online learning is an increasingly popular mode for educational delivery. While online learning has some

advantages in terms of flexibility and autonomous learning, which typically support engagement in learning, potential dangers of undermining engagement are in need of addressing. Chief among these are the relative absence of feedback, social cues, and other ways that students typically self-regulate learning in educational settings. Live relationships support and mentoring, which we have argued are primary conditions for engagement, are also either absent or quite different in nature. Some of these obstacles may have technological solutions; others may require live human intervention; certainly, more research and development is needed in this area.

Research suggests that, overall, Audience Response Systems (ARSs), or clickers, enhance most students' interest in the course, understanding, and depth of processing, thereby bolstering achievement. The vast preponderance of evidence suggests that students are engaged when using them, but much of this research is from simple surveys soliciting students' agreement with certain attitudes. Thus, it is difficult to conclude that students using ARSs are highly engaged in more than a fleeting way, as is frequently observed when working on more sustained projects.

Certain video games skillfully employed within a broader curriculum can engage youth significantly more than traditional teaching approaches, as evidenced by Coller and colleague's quasi-experimental ESM research on a video game approach to mechanical engineering instruction. Overall, studies suggested that a video game approach can be effectively implemented into instruction to simulate real-world professional practice and foster optimal engagement in the learning process. Results also suggested that students who took a game-based approach learned more and developed more competencies than students who took the same course using the traditional approach. Deep immersion and the increased opportunity to use one's skills in the authentic professional context created by the video game stimulated both a playful and serious attitude towards the work, resulting in deeper processing and the making of more connections among concepts in the course. As has been suggested, deep cognitive engagement is facilitated by working with domain-specific tools, which is a primary characteristic of optimal learning environments. It is possible that video games are so engaging because they can be among the most sophisticated domain-specific tools that can be provided, plunging students into deep thought.

Other educational applications of computer-based technologies also show signs of promise. For example, "embedded phenomena" (Schweinle and Helming 2011) such as the Aqua Room, in which whole classes conduct multiweek investigations of simulated scientific phenomena that are "mapped" onto the physical space of the classroom, produce high participation rates and suggestions of high engagement based on observation. Evidence on the power of technology to engage in learning is somewhat mixed; however, pedagogical designs to promote inquiry and intrinsic motivation during authentic, socially mediated practice, in which immersive technologies play an important role, have often produced high levels of immersion and engagement. Similarly, youth generally report positive experiences like having fun, and enjoying experiential learning in programs like *Globaloria* in which they design video games themselves. Here again, however, such programs have used a discovery-based curriculum, including the open sharing of ideas, expert mentoring, student reflection, and collaboration within a community of practice to support the integration of technology use (Reynolds and Caperton 2011).

References

Aldrich, C. (2005). *Learning by doing: A comprehensive guide to simulations, computer games and pedagogy in e-learning and other educational experiences*. New York: Wiley.

Bangert-Drowns, R. L., Kulik, C.-L. C., Kulik, J. A., & Morgan, M. T. (1991). The instructional effect of feedback in test-like events. *Review of Educational Research, 61*(2), 213–238.

Barber, M., & Njus, D. (2007). Clicker evolution: Seeking intelligent design. *CBE – Life Sciences Education, 6*(1), 1–8.

Beatty, I., Gerace, W. J., Leonar, W., & Dufresne, R. J. (2006). Designing effective questions for classroom response system teaching. *American Journal of Physics, 74*(1), 31–39.

Beaty, L. (2004). Transforming student learning with classroom communication systems. *EDUCAUSE Center for Applied Research (ECAR) Research Bulletin, 3*, 1–13.

Black, P., & William, D. (1998). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan, 80*(2), 139–144.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42.

Bunce, D. M., VandenPlas, J. R., & Havanki, K. L. (2006). Comparing the effectiveness on student achievement of a student response system versus online WebCT quizzes. *Journal of Chemical Education, 83*(3), 488–493.

Burns, R. A. (1985, May). *Information impact and factors affecting recall*. Paper presented at the Annual National Conference on Teaching Excellence and Conference Administrators, Austin.

Caldwell, J. E. (2007). Clickers in the large classroom: Current research and best-practice tips. *CBE – Life Sciences Education, 6*(1), 9–20.

Campbell, J., & Mayer, R. E. (2009). Questioning as an instructional method: Does it affect learning from lectures? *Applied Cognitive Psychology, 23*, 747–759. doi:10.1002/acp.1513.

Coller, B. D., & Shernoff, D. J. (2009). Video game-based education in mechanical engineering: A look at student engagement. *International Journal of Engineering Education, 25*(2), 308–317.

Coller, B. D., Shernoff, D. J., & Strati, A. D. (2011). Measuring engagement as students learn Dynamic Systems & Control with a video game. *Advances in Engineering Education, 2*(3), 1–32.

Collins, A., & Halverson, R. (2009). *Rethinking education in the age of technology: The digital revolution and schooling in America*. New York: Teachers College Press.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior (Perspectives in social psychology)*. New York: Plenum.

Dede, C., Ketelhut, D. J., Clarke, J., Nelson, B., & Bowman, C. (2005, April). *Students' motivation and learning of science is a multi-user visual environment*. Paper presented at the annual meeting of the American Educational Research Association, Montreal.

d'Inverno, R., Davids, H., & White, S. (2003). Using a personal response system for promoting interaction. *Teaching Mathematics and Its Applications, 22*(4), 163–169.

Draper, S., Cargill, J., & Cutts, Q. (2002). Electronically enhanced classroom interaction. *Australian Journal of Educational Technology, 18*(1), 13–23.

Duncan, D. (2005). *Clickers in the classroom: How to enhance science teaching using classroom resonse systems*. New York: Addison Wesley and Benjamin Cummings.

Federation of American Scientists. (2006). *Harnessing the power of video games for learning*. Washington, DC: Summit on Educational Games. www.fas.org/gamesummit/Resources/Summit on EducationalGames.pdf. Accessed 11 April 2013.

Fischer, N., Kuhn, H. P., Zuechner, I., & Theis, D. (2011, August). *Quality and dosage of extracurricular activities: Effects on motivational and social development*. Paper presented at the biennial meeting of the European Association for Research on Learning and Instruction (EARLI), Exeter.

Gee, J. P. (2007). *What video games have to teach us about learning and literacy*. New York: Palgrave MacMillan.

Guthrie, R. W., & Carllin, A. (2004). Waking the dead: Using interactive technology to engage passive listeners in the classroom. In *Tenth Americas Conference on Information Systems*, New York.

Halloran, L. (1995). A comparison of two methods of teaching. Computer managed instruction and keypad questions versus traditional classroom lecture. *Computers in Nursing, 13*(6), 285–288.

Hedley, N. R., Billinghurst, M., Postner, L., May, R., & Kato, H. (2002). Explorations in the use of augmented reality for geographic visualization. *Presence; Teleoperators and Virtual Environments, 11*(2), 119–133.

Hmelo-Silver, C. E., Duncan, R. G., & Chinn, C. A. (2007). Scaffolding and achievement in problem-based and inquiry learning: A response to Kirschner, Sweller, and Clark (2006). *Educational Psychologist, 42*(2), 99–107.

Hollenback, S. (2009). *Technological innovations in the classroom related to student engagement* (p. 17). DeKalb: Northern Illinois University.

Krajcik, J., Blumenfeld, P., Marx, R., Bass, K. M., Fredericks, J., & Soloway, E. (1998). Middle school students' initial attempts at inquiry in project-based science classrooms. *The Journal of Learning Sciences, 7*(3 & 4), 313–350.

Larson, R., & Hansen, D. (2005). The development of strategic thinking: Learning to impact human systems in a youth activism program. *Human Development, 48*, 327–349. doi:10.1159/000088251.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Lee, H. S., & Songer, N. B. (2003). Making authentic science accessible to students. *International Journal of Science Education, 25*(1), 1–26.

Linn, M. C., Lee, H.-S., Tinker, R., Husic, F., & Chiu, J. L. (2006). Teaching and assessing knowledge integration in science. *Science, 313*, 1049–1050.

Marrs, K. A., & Novak, G. (2004). Just-in-time teaching in biology: Creating an active learner classroom using the internet. *Cell Biology Education, 3*, 49–61. doi:10.1187/cbe.03-11-0022.

Mayer, R. E., McNamara, A., & Adams, D. (2011, April). *Is there an advantage to learning from narrative computer games?* Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

McGlynn, A. P. (2008). Millennials in college: How do we motivate them? *Education Digest: Essential Readings Condensed for Quick Review, 73*(6), 19–22.

Moher, T., Wiley, J., Jaeger, A., Lopez Silva, B., Novellis, F., & Kilb, D. (2010, June). Spatial and temporal embedding for science inquiry: An emperical study of student learning. In *International Conference of the Learning Sciences* (pp. 826–833). Chicago.

Newman, R. S. (2002). How self-regulated learners cope with academic difficulty: The role of adaptive help seeking. *Theory into Practice, 41*(2), 132–138.

Novak, G., Patterson, E. T., Gavrin, A. D., & Christian, D. (1999). *Just-in-time teaching: Blending active learning with web technology*. Upper Saddle River: Prentice Hall.

Plass, J. L., O'Keefe, B., Homer, B. D., Hayward, E. O., Stein, M., & Perlin, K. (2011, April). *Motivational and educational outcomes associated with solo, competitive, and collaborative game play*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Preszler, R. W., Dawe, A., Shuster, C. B., & Shuster, M. (2007). Assessment of the effects of student response systems on student learning and attitudes over a broad range of biology courses. *CBE – Life Sciences Education, 6*(1), 29–41.

Reynolds, R., & Caperton, I. H. (2011). Contrasts in student engagement, meaning-making, dislikes, and challenges in a discovery-based program of game design learning. *Educational Technology Research and Development, 59*(2), 267–289.

Reynolds, R., & Chiu, M. M. (2012, July). *Contribution of motivational orientations to student outcomes in a discovery-based program of game design learning*. Paper presented at the biennial meeting of the International Conference of the Learning Sciences, Sydney.

Roberts, D. F., Foehr, U. G., & Rideout, V. (2005). *Generation M: Media in the lives of 8–18 year-olds*. Menlo Park: Kaiser Family Foundation.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in a social context*. New York: Oxford University Press.

Rushkoff, D. (2010). *Program or be programmed: Ten commandments for a digital age*. New York: OR Books.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (Eds.). (2008). *Motivation in education: Theory, research, and applications* (3rd ed.). Upper Saddle River: Merril Prentice Hall.

Schweinle, A., & Helming, L. M. (2011). Social psychology of education. *Social Psychology of Education, 14*(4), 529–546.

Scoresby, J., & Shelton, B. E. (2007, April). *Visual perspectives within educational computer games: Effects on presence and flow within virtual learning environments*. Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Shaffer, D. W. (2006). *How computer games help children learn*. New York: Palgrave MacMillan.

Shernoff, D. J., & Csikszentmihalyi, M. (2009). Flow in schools: Cultivating engaged learners and optimal learning environments. In R. C. Gilman, E. S. Heubner, & M. J. Furlong (Eds.), *Handbook of positive psychology in schools* (pp. 131–145). New York: Routledge.

Simpson, V., & Oliver, M. (2007). Electronic voting systems for lectures then and now: A comparison of research and practice. *Australasian Journal of Educational Technology, 23*(2), 187–208.

Sizer, T. R. (1984). *Horace's compromise: The dilemma of the American high school*. Boston: Houghton Mifflin.

Smith, B. K., & Reisner, B. J. (2005). Explaining behavior using video for observational inquiry and theory articulation. *The Journal of Learning Sciences, 14*(3), 315–360.

Squire, K., Giovanetto, L., Devane, B., & Durga, S. (2005). From users to designers: Building a self-organizing game-based learning environment. *TechTrends: Linking Research and Practice to Improve Learning, 49*(5), 34–43.

Stiggins, R. J. (1999). Assessment, student confidence, and school success. *Phi Delta Kappan, 81*(3), 191–198.

Thompson, H., & Vedantam, S. (2012). A lively mind: Your brain on jane austen. http://www.npr.org/blogs/health/2012/10/09/162401053/a-lively-mind-your-brain-on-jane-austen. Accessed 17 Oct 2012.

U.S. Department of Education. (2009). *Evaluation of evidence -based practices in online learning: A meta-analysis and review of online learning studies*. Washington, DC: Department of Education, Office of Planning, Evaluation, and Policy Development.

van Dijk, L. A., van den Ber, G. C., & van Keulen, H. (2001). Interactive lectures in engineering education. *European Journal of Engineering Education, 26*(1), 15–18.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press.

Wenger, E. (2003). Communities of practice and social learning systems. In D. Nicolini, S. Gherardi, & D. Yanow (Eds.), *Knowing in organizations. A practice-based approach* (pp. 76–99). Armonk: M. E. Sharpe Inc.

Wigfield, A., Eccles, J., Schiefele, U., Roeser, R. W., & Davis-Kean, P. (2006). Development of achievement motivation. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology* (Social, emotional, and personality development 6th ed., Vol. 3, pp. 933–1002). Hoboken: Wiley.

Witmer, B. G., & Singer, M. J. (1998). Measuring presence in virtual environments: A presence questionaire. *Presence; Teleoperators and Virtual Environments, 7*, 225–240.

Zimmerman, B. J. (2008). Goal setting: A key proactive source of academic self-regulation. In D. H. Schunk & B. J. Zimmerman (Eds.), *Motivation and self-regulated learning: Theory, research, and applications* (pp. 267–295). New York: Routledge.

Chapter 15
Re-engineering the Schools of Tomorrow: Towards Community Sponsorship

Introduction

In this final and concluding chapter, we begin by surveying the larger societal context in which students are schooled, and illustrate some of the effects of this broader context on students' attitudes and achievement. However, times *are* changing. A vast array of new technologies, online delivery platforms for education, and privatized educational outlets increasingly provide consumers with numerous options for their education with which traditional schools will have to compete. To do so effectively, schools will have to transform themselves in the direction of the optimal learning environments presented in this book. While doing so in mass education remains a great challenge, much will be accomplished if greater priority is placed on meeting all individual students' needs (even in large group settings). The key characteristic of optimal learning environments is fairly consistently demonstrated to be environmental complexity, or providing a powerful combination of environmental challenge and support. Fostering supportive relationships integral to forming genuine learning communities will also be key. Youth can be very valuable societal resources, and actually thrive when they feel a sense that they matter and belong through taking valued roles to contribute. Such experiences are essential to developing domain-specific skills, identity, and career direction.

There is great demand for adding more time to the school day that has already gained traction among policy makers, and is already occurring in a variety of states and cities. The main question appears to be how future schools will be reengineered with respect to time, resources, and staff. Forming strong community partnerships may be the essential ingredient in adapting to the times, expanding not only school time but the number and diversity of community-based engaged learning opportunities. A number of useful models of Expanded Learning Time and Opportunities (ELTOs) are described in the chapter. These models and those presented in this book suggest that schools that effectively engage youth in the future will likely move towards an intentionally blending of academic, physical, social, and

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emotional goals and activities throughout an extended school day, the structure and specifics of which remain to be worked out but will likely become an increasingly high priority.

Our Present Educational Culture of Individual Achievement

In this book, we have highlighted engagement in schools, and presented several powerful models of it. Although most of the research presented portrayed models in which students had positive learning experiences, it is important to revisit the realities of most schools in the present policy environment. In general, we are continuing our long history of public education based on a model of industrialization, centralization, and urbanization stemming from the Industrial Revolution. In that model, education, knowledge, and indeed, students themselves are seen as "products" of schooling. Schooling is in large part subservient to the larger industrial, capitalistic, and increasingly technological economy, where students are in "the pipeline" as resources needed to feed large, multinational corporations and other institutions of employment. Yesterday's captains of industry have evolved into corporate leaderships of today who continue to lobby legislators for economically self-interested policies advantageous from the capitalistic perspective of optimizing human resources as raw materials of industry (i.e., both cheap labor and highly skilled specialists). Such policies are costly, however, in terms of longer-term motivation to learn and thrive for many youth (Steinberg 1996). Chief among these policies is the recent emphasis on high-stakes, standardized testing that constrains teachers, the curriculum, and most especially, students in the pursuit of meaningful engagement in a meaningful education.

As discussed in Chap. 5, our present educational arrangement can have—indeed, has—profoundly negative psychological effects for many youth. Failure institutionalized into the educational system can become internalized failure in the form of permanently damaged self-esteem. While much is made of the narrowing of instructional and curricular options, less attention is paid to quite possibly the larger problem for students: a narrowing of the range of educational—and indeed, life—goals. This narrowing of goals—the sense that grades and test scores "are everything"—was aptly demonstrated in the recent study by Schweinle and Helming (2011), in which college students were asked to describe challenging course activities and their goals in completing them. Answers were categorized by five themes: (a) grade/extrinsic (i.e., to get a good grade), (b) mastery/intrinsic (i.e., to learn the information or for intrinsic enjoyment), (c) amotivation (i.e., working to just finish), (d) social goals (i.e., to have positive or satisfying social interactions), or (e), performance goals (i.e., to compare favorably to others or avoid unfavorable social comparisons). Despite all of the attention paid to mastery and performance goals in the motivational literature, mastery goals were cited 55 out of the total sample of 276, less than 20 % of the time. Performance-approach goals were cited only four times, or less than 1.5 % of the time (with no responses coded as performance-avoidant). The goal that was cited by far the most, 151 times, or more than all of the other

categories combined (54.7 %), was to get a good grade. Most likely, students wanted good grades to reach their career and other long-term goals, and do not perceive the goal as primarily a competitive one, even if the way that grades are dispensed is a fundamentally competitive system.

A central finding of the study is that students reported greater engagement, intrinsic motivation, and efficacy when feeling "successful" in reaching their goal. Given the goal was to earn a good grade in the majority of the cases, we can logically make the following translation: Students felt most engaged and motivated when successfully earning good grades, and the least engaged when failing in their goal to earn good grades. This supports the notion that students reflexively devalue tasks and activity types in which they feel less capable. In addition, the perceived difficulty of the task further undermined students' efficacy and engagement, but only if the challenge was defined in comparison with others. The unfortunate implication is that students getting poor grades (or otherwise experiencing less success in obtaining their goals) will be less likely to pursue or set challenges for themselves in related tasks. Since college tasks are highly domain specific, this could mean a loss of interest in a major, profession, or career choice.

The Future of Traditional Schooling: Change or Become Obsolete

In daily contexts beyond school, adolescent youth are vulnerable to a myriad of sociohistorial, cultural, economic, social, and more proximal factors. In addition to the influences of family, friends, and events in one's social life, forces of the media and powerful new online and social media—with its lightening pace of informational transfer—all compete for the attentional resources of adolescents. In this context, traditional teacher-centered pedagogies will fail to compete effectively for the attention of youth. The days of school being the main source of discipline-based and career-oriented information are now over. Increasingly, school learning is becoming the least comfortable way young individuals have ever been asked to learn, and the pace of change in classrooms compared to the outside world is almost painful. Asking students to passively absorb information as opposed to being involved in problem solving or fashioning of products of value to the community has already been shown to be extremely ineffective at engaging youth—but increasingly it will be rejected altogether.

In prison, "time-management" courses are often made available to inmates because people are less likely to go crazy if time is structured and they can be involved in some hobbies or the making of things. That is, a complete absence of flow is a deadly killer. At the risk of sounding dramatic, it is not altogether inaccurate to suggest that we often fail to show the same level of humanity to our public school students that we do to prison inmates. Between being captive in classrooms until the bell rings, constraints on freedom of action and thought, and lack of physical and socially relevant activities in the name of learning information and isolated skills, we have suspected for a long time that students are much like prisoners in

schools when contrasted with how they experience the modern world. Nationally representative ESM data now make extremely clear that this is exactly how the masses of American youth indeed experience public schools. They are more engaged and motivated in almost any other context they experience than in high school classrooms, which compete for last place in a ranking of engaging contexts only with paid work settings, where freedom is similarly constrained and monotonous experience also reins (Schmidt, Shernoff and Csikszentmihalyi 2007). Students are almost certain to walk with their feet as more options become available; more likely, however, they will walk with their computer mouses.

Towards Optimal Learning Environments: Individualization and Environmental Complexity

The research described in this book, and particularly the models profiled such as Montessori schools and Glaser Quality schools, strongly suggests that if we were to pick one guiding principle to improve the state of affairs, it would be modeling education to meet the developmental, social, emotional, and intellectual needs of the individuals whom we serve. Thus, the greatest room for hope resides in the MAIN Theory: Meeting All Individuals' Needs. Some of the most observant and original educational thinkers suggesting alternative systems of education to the traditional model—such as John Dewey, Maria Montessori, and William Glasser—converge on the insight that it is not individualizing instruction per se so much as meeting all individual's needs that is important. Dewey (1896/1973) consistently wrote about the importance of a pupil's interests as an organic outgrowth of self-expression, but he clarified that the implication of this principle for the teacher was neither to create artificial inducements to attract interest nor to develop an individualized curricula tailored to each child's interests. Doing so would be aiming directly for a child's interests; rather, he suggested aiming at the conditions that, in a sense, *lie in back of them*. This could be achieved by providing an environment with the physical, social, and intellectual resources supporting the child's underlying impulses, desires, and needs. Such an environment would allow interests to grow naturally alongside other processes of development (Dewey 1975). Such an insight foreshadowed self-determination theory, which argues that when basic human needs are fulfilled, motivation then flourishes (Connell and Wellborn 1991; Deci and Ryan 1985). Indeed, an examination of empirically supported educational environments that promote engagement are often those for which provisions of safety and positive relationships build a foundation to successfully move into engaging activities and group interaction. Montessori (1967) and Glasser (1998) methodically observed, studied, and classified the developmental and psychological needs of children, and focused on building educational environments around fulfilling those needs. This created educational traditions with track records of supporting both the developmental and learning needs of students, thus achieving both important educational aims.

Engagement can be productively seen as sitting on the top of each individual's hierarchy of needs, similar to self-actualization needs, meaning that more foundational needs must first be met—such as physical/safety, social interaction, emotional security, and other needs frequently met by recognition and participation within a community—before youth can be engaged effectively (Smith and Avika 2008). The Glasser Quality School Model for example (See Chap. 11) is suggestive that some students become disengaged with schooling simply as a result of a psychological block manifesting from poor interpersonal relationships in the school.

Individualizing education is undoubtedly a key principle for fulfilling the developmental needs of students reminiscent of Einstein's $E=MC^2$ educational ideal of training independently acting and thinking *individuals*. This means that each student may have a different motivational drive based on a different set of needs. While this ideal may never realistically be met to 100 % satisfaction of all individuals in large classes, we have seen in the previous chapters a number of innovative models whereby such an ideal is more closely approximated. Both the Glasser and Montessori models, for example, do a nice job of illustrating how attending to the needs of individuals as a core educational mission ignites and sustains the motivation of those individuals.

Valiant efforts and important models of differentiated curriculum aside, we soon run into the problem of available resources outstripping the teachers' time and attention to individualize education *so long as the teacher is the only one responsible for the growth and learning of the students*. Recall Horace's dilemma (Sizer 1984): should he assign more personalized writing assignments for his load of 120–180 students? And if he did, would it not be long before making the compromise from the ideal of personalization to streamlining just to avoid being buried by work? Dynamic models that successfully individualize education, however, build personally supportive relationships not only between the students and teacher, but also among students to form learning communities in which they learn from each other. Only then do we actually penetrate the top level of the pyramid and engage youth by giving them opportunities to make educational choices and plans based on their interests and goals (Smith and Avika 2008), as is effectively illustrated by the Montessori Model (See Chap. 10). Engaging youth emanates from opportunities for peer interaction and participation in developmentally supportive activities frequently found in high quality after-school programs (See Chap. 12); but "high quality" is the operative phrase, as research has found that opportunities to work in smaller groups and take leadership roles are provided in only about half of youth programs (Smith and Avika 2008). Interestingly, engaging youth in these ways was related to positive youth-reported outcomes, suggesting that *both* satisfying developmental needs through provisions of safety and positive relationships *and* providing active opportunities for group interaction and task engagement are important for fostering positive youth outcomes (Smith and Avika 2008). When we conceptualize youth engagement as the top level of a hierarchy of needs, it becomes obvious that youth engagement is tantamount to youth self-actualization, suggesting profound benefits both in terms of mental health and optimal functioning. In other words, a full employment of attentional resources in the pursuit of meaningful goals is what pulls optimal development

along its growing edge; a small "e" engagement in activities can develop into a capital "E" engagement or commitment to a domain or field of interest.

In this book, *optimal learning environments* for engaging students in learning were approached through a variety of studies that provide empirical support of their effectiveness. The dominant attribute of optimal learning environments was found to be environmental complexity, in which several components of environmental challenge (e.g., high expectations, clear goals and expectations, task challenge, development of deep thinking and skill development with domain specific tools, demonstration of performance, conceptual and language development, and assessment) coexists with components of environmental support (e.g., performance feedback, motivational support, relationship support, activity, and interactivity). This combination frequently produces meaningful forms of engagement, including positive emotional responses in the face of academic intensity (i.e., challenge and importance). Students appear to be meaningfully engaged in learning activities when they are structured more like nonacademic classes (Shernoff et al. 2003) and after-school enrichment activities (Shernoff and Vandell 2007). That structure may include the provisions of autonomy and initiative in challenging and meaningful activities, as well as the opportunity to interact with peers and adult supervision. The opportunity for action and to demonstrate skills is the key.

Activities in optimal learning environments usually have a sense of liveliness, and very often students have the opportunity to participate in epistemic role playing, in which students learn how to be a creative, productive individual of value to the community. There is usually a pedagogical purpose that is clear to students—that is, a purpose for the activity based in the real world. For meaningful engagement to occur, the activity is experienced as both enjoyable and important. There is a clear connection between the means and ends of the activity that propels the activity forward (Dewey 1916/1944). Students generally exercise mental focus and intellectual discipline in the context of relative social freedom. And because the overall activity is left somewhat open ended—a scientist can always run the next experiment—learners are left wanting to continue the activity in contrast to never wanting to open a science book again when an agonizing test is finally over (as Einstein experienced, and most likely influenced his thoughts about motivation and education).

Although these supportive features are crucial, the role of rigor and learning self-discipline for nurturing expectations for success and healthy attitudes cannot be stressed enough. Environmental challenge must include an insistence upon a clear demonstration of mastery and the focused use of the mind and body. Often programmatic models uniting themes of both support and challenge revolve around a unique and unifying theme, such as that of positive sports culture and engaging students through physical activity as in the Arete School model (see Chap. 10). Some budding research suggests that new technologies that have "presence" or the ability to "envelop" the learner in a virtual learning environment can be extremely flow-inducing by infusing a sense of intrinsic motivation into the learning of a highly challenging skill set such as those used by mechanical engineers (see Chap. 14). This was especially true when the technologies were combined with a pedagogical design to promote inquiry and intrinsic motivation during authentic, socially mediated practice.

Based on the principle of intrinsic versus extrinsic motivation alone (Ryan and Deci 2000), there can be little question that the involuntary nature of school is a motivational chip stacked against classroom engagement compared to engagement in voluntary settings. However, it is also clear that (a) there is a great deal that classroom teachers can do to compensate in order to dramatically increase perceptions of autonomy in classrooms (Black and Deci 2000; Reeve 2009; see Chap. 6) and that (b) the voluntary nature of out-of-school time and other informal learning environments is far from the only factor contributing to high engagement in them. Recent research is beginning to demonstrate that engagement is quite malleable, and that *optimal learning environments* are rare but possible to create in traditional public school classrooms. The key characteristic of optimal learning environments appears to be environmental complexity, in which both environmental challenges and supports are simultaneously present. Optimal learning environments created in traditional public school classrooms typically create the perception that the activity is personally important to participants; foster belongingness and relatedness in the context of strong student–teacher relationships; stimulate interactivity among both the instructor and peers; and facilitate the building of new skills through working with domain-specific materials in which each individual has a well-defined role contributing to the goal of the group. Optimal learning environments (as identified by empirical support of high engagement) in whole-school and after-school environments share many of the same basic characteristics (see Chaps. 10, 11, and 13).

Fostering Youth Engagement: From Relationships to Community

It cannot be emphasized enough that the most common thread running through all of the models of high engagement presented in this book was the creating of a learning environment in which positive relationships flourish. Positive and nourishing relationships sustain healthy individuals in general. Given that children and youth spend such a large percentage of their life in schools, why would it not stand to reason that positive relationships in schools are essential for positive well-being? In the most powerful models for engagement, what you hear over and over again by participants is that the environment is "like a family." Perhaps the key difference between familial relationships and traditional school or teacher–student relationships is that in families, members want each other to succeed, but they also *care* about each other and their well-being. Usually, they care about their well-being even more so than their success.

This relational posture is actually the opposite of that in traditional schools, and in the policy environment emphasizing high-stakes testing, it is an understatement to say this has gotten much worse in recent years. Realizing the primacy of a positive relational environment in schools for healthy development, the Carnegie Council on Adolescent Development has called for schools to create "communities of learning, where stable, close, mutually respectful relationships with adults and peers are considered fundamental for intellectual development and personal growth"

(Carnegie Council on Adolescent Development 1989, p. 9). This includes recommendations for quality advising, multiple-year placements with the same teacher, and instruction with smaller groups of students.

A useful comparison may be the difference between relationships in school versus those in after-school programs and clubs. As highlighted, particularly in Chaps. 12 and 13, caring and respectful relationships, particularly between youth and adults, play a fundamental role in mediating the after-school experience (Walker et al. 2005). It appears that many youth enjoy after-school programs in part because they forge more authentic relationships with adults in which they can "be themselves" and discuss important events in their lives. Relationships in these settings offer a distinct source of support falling somewhere between the sense of care received from family and support for building specific competencies found during academic classes. Especially in programs in which bonding is the explicit goal, as with mentoring programs (see Chaps. 7 and 13), such programs can be perceived as a "second home." In fact, a large reason that students enjoy their experience in after-school settings is because they enjoy more relaxed, personable relationships with respected adults.

The terms "community" and "learning community" are frequently identified as an educational ideal. But what makes a good learning community, and how does a school go from fostering positive relationships to a creating an authentic community? Supporting the notion that "everything important to know we learn in kindergarten," once again Montessori offers a very instructive model. The very strong relationships that are forged at Montessori schools do not occur by accident. A few key principles in Montessori education that run like steel threads towards the creation of healthy development of the individual and the community are those of *respect* and *peace*. A large goal of Montessori education is to teach children to respect and gain awareness of others. High premiums are put on the skills of listening respectfully and not interrupting. If a child would like the attention of an adult who is talking to someone else, for example, they are taught to give a gentle tug to the adult, at which point the adult can hand gesture to ask for a moment until finishing the conversation. Part of the educational program is the learning of essential social skills such as resolving conflicts with others. Even at an early age, children can be taught to listen; to state their feelings; to be polite (i.e., to respond to offensive behaviors with a simple, "No, thank you"); and to give a hug upon resolution. Skills at conflict resolution are not deferred until a pattern of conflicts are inevitable, at which time legislatures wake and "add on" a curricular package labeled "Social and Emotional Learning." *All* of education is social and emotional learning.

In the Montessori approach, love and peace are at the center of life in the learning community, which starts at day one. In time, and through adult guidance, respect for others is nurtured into respect for the school and their immediate surroundings, animals, other cultures, the environment, and ultimately, all beings. Much like intrinsic motivation to learn and explore, the sense of love and respect come from within an environment in which the needs of the individual are nurtured. There is no "one way" to do things at Montessori schools, as well as the other school models

discussed in this book such as the Murray School in Virginia, Eagle Rock School in Colorado, and the Nova School in Washington (See Chaps. 10 and 11). In all of these model schools, the individual finds his or her own way to learn, to interact, and to contribute. Thus, it is not farfetched to suggest that creating a better world and a better tomorrow indeed starts in Kindergarten—by nurturing the world we want in microcosm at that time, and teaching individuals *not only to be valued but also how to value others*. Logically speaking, a world in which everyone wants to be valued but nobody has learned how to meaningfully value others is untenable. It all starts with simple notions of respect, peace, and love at the earliest of ages. Some might say this is the job of the home and not the school. However, how could a child learn to live and behave in such a way even in a compatible home environment from 4 p.m. until bedtime and on the weekends, when the environment from 9 a.m. until 3:30 p.m. on weekdays teaches one to live quite differently? A divided nurturance surely yields only a divided person in terms of intentions, behavior, and development. The effect of one environment would constantly be undoing the effect of the other. Thus, it follows that many current, progressive educational goals of fostering tolerance for diversity, social justice, and increased acceptance of marginalized groups is not just an educational "add on," but is ideally designed into all aspects of the educational program in the form of supportive relationships in which all individuals are properly valued regardless of background or social difference.

In Chaps. 8 and 9, it was proposed that the primary or ideal mode of learning for obtaining vocational and professional training and mastery, certainly an important goal of adolescents in high school and college, is participation or mentorships in a community of practice. To be useful to policy makers, researchers need to understand the conditions under which individuals become participants in a community of practice and develop an identity within that community. As of now, after-school programs offer some of the best opportunities to observe students engaging in math, geography, language arts, and other disciplines in the real-world contexts of local neighborhoods, automotive repair shops, science labs, news stations, or art production studios (Yonezawa et al. 2009). New forms of engagement in new settings can allow students to "reinvent themselves," altering how others see them and how they see themselves (Yonezawa et al. 2009).

Schools of Tomorrow

I have suggested that engaging schools in the future will better meet the diverse needs of students and personalize learning towards the self-actualization of individuals. Note, however, that this goal is doomed from the start when coupled with an emphasis on *standardized* tests, which can reasonably be expected to produce only *standardized individuals*. This of course works against the development of an authentic community. For according to Einstein (1954), as we may recall (see Chap. 2), "a community of standardized individuals without personal originality and personal aims would be a poor community without possibilities of development" (p. 60).

Personalizing education also means that there is not only one standardized setting where learning occurs—most especially, a single, standardized classroom. Some students learn better in some contexts than in others. Traditional schools tend to have one standardized aim: the transmission of knowledge. But as Einstein stated, "Knowledge is dead; schools serve the living." Not all students have the same aim. As Einstein also implied, it is natural in an authentic community for individuals to have different aims, and different *roles*. Thus, personalization requires a flexible structure instead of rigidity (Sizer 1984). This is likely one reason students are more engaged in more flexible after-school programs compared to classrooms. Traditional schools have five to ten standardized school subjects, which really can be reduced to One Best Curriculum (Sizer 1984). However, different individuals are interested in a wide range of topics, defying a standardized view of "school subjects." They should be exposed to making contributions in the many areas of social and economic life that exist within the culture. Traditional schools have one standardized time for academic learning. However, self-propelled learners learn virtually around the clock when they are not sleeping, with some of the most important learning opportunities occurring outside of traditional school hours (Martin 2011).

If we are being honest, schools will have to consider the role of prevailing public skepticism about adolescents and their potential in general (Sizer 1984). Too often, their immense energy and talents are regarded as expendable on mere training and socialization. They are not trusted for real, important uses within the community, marketplace, and economy. Their lack of value to society is thus not only or mainly due to a lack of interest on their part; it is a condition imposed on them, manifesting in a lack of respect against which they often rebel. Prepared only for semi-skilled jobs well below their level of intelligence and competence, it is no wonder that, like Twain's Huck Finn, they may want little to do with the adult world. Recent teenager riots in England demonstrated this quite vividly; the target of the unrest was not entirely clear, but rebellion against (adult) authority appeared to underlie it.

Youth, and adolescents in particular, are in fact an extremely valuable resource. They are not merely adults-in-training. They can be substantial producers and keen problem solvers. Even a cursory study of child prodigies is enough to convince anyone just how much human potential and talent is available at very early ages. There are also countless examples of "normal" youth or adolescents who have demonstrated remarkable achievements, from starting businesses to achieving musical expertise to programming iPhone apps. Making authentic contributions to society is also a sure way to engage youth. As vocational programs have shown, youth frequently thrive when they can see how their work has real-life value, and especially when it might pave a pathway to their future career or profession. As a society, there is currently wide agreement that children deserve a good life and nurturing environment; however, we still have been able to support and encourage the potential of adolescent-aged youth on a wide scale.

Youth have repeatedly shown that they can make meaningful contributions to large civic challenges (see Chap. 12). When given a voice, and that voice is listened to, they have shown that they can be an agent of change. Indeed, this is the very dynamic that should constitute and define what youth engagement is all about in the

future. Educators, administrators, and policy makers alike need to advocate for youth to play a more active and important role in shaping their education, their institutions, and their future. From their significant experience in schools, adolescents have a valuable perspective on schooling. It is one that differs from that of adults, and which can help to make important decisions to improve school policies and school life.

The future of all students might be brighter with a little less conditioning to perform well on tests and more encouragement to "follow their bliss." In fact, anecdotal evidence suggests that learning through discovery may be the surest way to join the creative elite like Google's founder Larry Page, Amazon's Jeff Bezos, and Wikipedia founder Jimmy Wales, to mention just a few. One study found that Montessori alumni were so disproportionately overrepresented among the 3,000 successful executives, entrepreneurs, inventors, and founders of companies who participated in the study that one might suspect a "Montessori Mafia" (Sims 2011). Could it be that the constant improvising, experimenting, and retesting nurtured the creativity and inventiveness of these thinkers and doers? And if so, did such a disposition towards learning result from a collaborative environment without tests, and self-directed discovery and learning that is fostered in Montessori schools? Certainly, these creative exemplars themselves believe that their tendency to follow their curiosity and the joy of discovery was the primary factor in their own success, according to the study (Sims 2011).

Nevertheless, learning activities in the schools of tomorrow must be not only intrinsically enjoyable, but also purposeful and directed to activity valued within the community. Many out-of-school time programs are good examples of this balance, frequently due to *developmental intentionality*, in which learning and developmental needs of participants are intentionally designed into the youth programming (see Chap. 13). We discuss how schools might be reengineered in the future to integrate a balance of both academic and developmental goals below.

Reconfiguring the Time and Space of Schooling

Would adding hours to the school day help? Perhaps, but first we would have to ask why that would change the prevailing attitude of students, as well as teachers, administrators, and staff, towards learning and schooling in general. It is hard to imagine that any other sector of society, be it business or the military or nonprofits, would go about a major reorganization by taking a model shown to be highly ineffective, inefficient, and outdated, and simply extend it to make it even bigger (Sizer 1984).

Nevertheless, Expanded Learning Time (ELT) is on the horizon, as demonstrated by initiatives such as MASS 2020 (http://www.mass2020.org/), which expanded the school day to the tune of 300 h per year in the state of Massachusetts. The vision is not only to expand school time but also to improve student outcomes in core subjects by broadening enrichment opportunities, improving instruction, and preparing students for "full engagement and participation in economic and civic life of the 21st Century" (MASS 2020 2008, p. 2). In fact, ELT models have been attempted in

a variety of states, and the ExpandEd program promises to take the drive to increase learning time and opportunities nationally (http://expandedexchange.wordpress.com/). In some cities like Chicago, the move towards expanded time is highly controversial, mainly due to the perception among teachers that longer hours are being forced upon them without sufficient compensation. The United States is not the only country making this type of a transition. For example, Germany has gradually shifted in recent years from traditionally half-day schools to full or extended day schools (Fischer et al. 2011).

There appears to be a near consensus that more learning time is part of the equation for student success. Currently, President Obama appears to be on board if not "all in." He has challenged school systems to rethink the school day in order to incorporate more time. His calls to action have been accompanied by high levels of support for educational and social innovation. The charge to educators is often combined with that to close or narrow the achievement gap, ameliorate the dropout crisis, and to provide equal access to schools that offer quality educational opportunities for those in need of them. Addressing the Hispanic Chamber of Commerce in 2011, Obama called for Expanded Learning Time to help America's children compete in the world. He addressed the crowd with the following charge:

> We can no longer afford an academic calendar designed when America was a nation of farmers who needed their children at home plowing the land at the end of each day. That calendar may have once made sense, but today, it puts us at a competitive disadvantage. Our children spend over a month less in school than children in South Korea. That is no way to prepare them for a 21st century economy. That is why I'm calling for us not only to expand effective after-school programs, but to rethink the school day to incorporate more time – whether during the summer or through expanded-day programs for children who need it…the challenges of a new century demand more time in the classroom. If they can do that in South Korea, we can do it right here in the United States of America.

The US Congress has been keen on the idea as well. Senators Kennedy (D-MA), Bingaman (D-NM), and Sanders (I-VT) co-sponsored the *Matters in Education (TIME) Act of 2011* that would expand learning time in targeted public schools across the country. In 2011, a coalition of 40 organizations offered their support for the legislations. Public schools have responded primarily by trying to improve basic math and reading skills through additional instruction, test preparation, and tutoring. These methods have produced some short-term gains, but often without engaging youth and igniting their fire to learn. Not surprisingly, the usual symptoms of low test scores, high rates of truancy, and disciplinary actions continue to culminate in widespread disengagement and a persistent dropout problem.

To address these problems, nonprofit and youth-serving organizations have invested in after-school and summer programs that address one or more of students' academic, social, and emotional needs (see Chap. 13). In many cases, the energetic and idealistic leaders and staff of community youth programs provide critical support and inspiration for youth to succeed in school. Unfortunately, such programs can be limited by funding, and students are not always able to cash in on the learning gains in their academic courses back at school.

Thus, momentum is now building to redesign traditional K-12 education to include more school time, with a focus on improving student outcomes particularly

for high-poverty schools and students in need (Malone 2011). Increasingly, it is not so much of a question whether or not school learning time will be expanded, but rather, *how*? The ELT movement will involve the reengineering of how schools use time, money, and staff to improve academic outcomes for students. There will undoubtedly be a policy debate over the form in which that will take place. It is not realistic to believe that that debate will be settled in the near future. It is probably more productive simply to recognize that it will be one of the most important debates about education in the foreseeable future, and encourage those who care about education to begin discussions.

Although there is presently no singular model for building extra hours into the school day—the school day would clearly be in need of redesign—the most common approaches include extended time devoted to core academic subjects, balancing academics with electives and supplemental services for all students across all grades, extending the school year and offering organized summer programs, or infusing experiential learning and enrichment activities into extra time with the help of community partnerships (Farbman 2009). This last approach has been labeled Expanded Learning Time *and Opportunities* (ELTO; See Malone 2011), thus emphasizing that it is not only expanded time that counts, but rather greater exposure and access to meaningful engagement in learning. A variety of useful models exist which vary based on the school and surrounding circumstances (Malone 2011). However, most strategies share the belief that the traditional school schedule is insufficient to prepare students for their future education and careers, and that increasing the time that students spend in schools will not, by itself, change those outcomes. Expanding an ineffective model cannot be a road to higher quality, but creates only more of the same. That is, the ELTO movement is not after just greater quantity of time in schools but also a higher *quality* of time.

The ELTO approach is designed to improve student outcomes and support closing the achievement gap through a whole child and whole school approach honoring both academic and developmental goals by utilizing elective offerings, homework assistance, and tutoring (Frazier and Morrison 1998). By providing opportunities for learning through music, art, scientific inquiry, college preparation, field trips, service learning, recreational clubs, and apprenticeships, the ELTO strategy seeks to level the economic playing field by providing enrichment and developmentally supportive opportunities typically more available to children in wealthier schools and communities (Malone 2011).

A particularly beneficial aspect of ELTOs is the combining of enrichment activities with core curriculum, so that students *do* reap benefits both in terms of enhanced engagement and academic gains. This approach is conducive to more real-life applications of academic content and consequently to more individualized approach and quality relationship building. For example, students might investigate water pollution, fish and wild life, and the salmon cycle; craft model salmon from clay; create a large media picture book about how salmon survive the odds; and participate in science inquiry break-out groups (MASS 2020 2008). Academically, this approach allows for more critical thinking, hands-on participation, and thus a deeper level of engagement and mental processing. Thus, it is more likely to meet the challenge of

improving achievement for all students while keeping students engaged. Students may also become engaged in a variety of civic and extracurricular activities, from exploring issues of prejudice or diversity in the community, to participating in theater, to writing a literary magazine, to exploring new cultures and languages, to giving a try at rock climbing or Taekwondo.

One example of an ELTO approach with a balanced use of time is Edward Bleeker Junior High School, an expanded day community school in Queens, New York, devoting equal time to academics, electives, and enrichment learning. It also provides on-site physical and mental health support services for students and their families. It creates engaging schedules that balance academic core courses with civic and community projects, hands-on learning, twenty-first century skill-building, and programs promoting socio-emotional development. The skills developed include problem solving, cooperation, communication, initiative and perseverance, teamwork, and others increasingly critical for future roles in a quickly changing economy (Malone and Noam 2011).

ELTO models recognize that schools cannot do everything by themselves, and that community partners are therefore a key asset if not a necessity. Thus, ELTOs can bring a wealth of community and organizational resources that provide students with experiential learning opportunities that they might not have otherwise. Fostering community involvements is a very important move in the direction of breaking down school isolation in order for students to make contributions in the "real world" (Bempechat and Shernoff 2012).

Engagement in School as a Function of Community Partnerships

Because engaging tomorrow's youth must include intentionally shaping learning about the real world in the context of purposeful activities, new directions for youth engagement must go beyond merely *simulating* "real life" as a response to the isolation of schools from the community. Rather, students best engage with community life as they pursue projects with real community value, forging a variety of partnerships between the school and its surrounding community. If schools are to support the thriving of youth, helping them to cultivate a larger sense of purpose (Damon 2008; Lerner 2004), schools and community organizations will need to become more deeply informed about each other's structures and operations, and become more directly invested in each other's efforts. It is clear that models of ELTO based on school–community partnerships are highly supportive of models of positive youth development such as Lerner's "5 Cs" (Eccles and Gootman 2002; Lerner et al. 2005). For example, community involvement and engagement helps students to build personal *confidence* and interpersonal *competencies*, *connect* with people and institutions in the community (of course, community engagement is definitional to *connection*), build *character* by respecting those from different cultures and valued societal norms, and foster *caring* or sympathy for others.

A key distinguishing component of ELTO models are the uniting of schools with community partners in programmatic planning, decision making, service delivery, and sharing of information and resources (Malone 2011). When schools and communities become stakeholders in each other's affairs, students become engaged in the world outside school walls rather than feeling imprisoned within them (Schutz 2006), as supported by research discussed in this book. Research has shown that the positive development of youth occurs through partnerships among a constellation of resources including families, schools, and communities. These partnerships can result in a coordinated vision and shared delivery structures to provide engaging and skill-building activities that support students' individual goals throughout a well-balanced learning day (Traphagen and Johnson-Staub 2010).

In addition to benefiting students, such partnerships are frequently mutually beneficial. Community partners can gain access to school participants and resources; and teachers may gain support for their instructional goals as well as flexibility in their schedules with more time for planning and professional development. The benefit for teachers is not trivial, as it is virtually impossible to create ideal learning conditions for students when they do not exist for teachers. Too often "teacher professional development" is reduced to the lecture-style format. However, if the "sit and soak" style of learning is not effective for students, why would it be for teachers? When teachers have more time to collaborate, plan, and discuss goals and strategies, they develop metacognitive abilities to think about the purpose of instruction and reflect on the extent to which they are meeting their goals and what they are learning in the process. They can begin to carefully assess and thus manage their own teaching, and learning about their teaching. For example, teachers could video analyze their teaching, explaining and processing their decisions as they review sections of video tape in data teams. This would likely increase self-confidence and self-efficacy. If the data examined included ESM data matched to video data, as in our studies discussed in Chaps. 6 and 7, this could be a powerful professional technique indeed, because there is no more important consumer of data on students' immediate response to instructional decisions than the teacher (see Chap. 6 for further discussion).

The mutually beneficial relationship between schools and community partners is particularly true for students in urban schools, especially those in poverty (Schutz 2006). Vibrant community–school relationships enhance teaching and learning in urban schools in several ways. For one, teachers, parents, and community members cannot work together well if they do not know each other (Epstein 1995). In fact, most comprehensive school reforms will struggle for sustainability in the long run without robust community participation. Unfortunately, current visions of the community–school relationship are still quite limited despite the many potential benefits (Schutz 2006).

Some of the most promising partnerships between local neighborhoods and urban schools may emerge from communities rather from the schools, since they bring the independence and autonomy that puts them on equal footing with schools (Schutz 2006). In fact, most attempts at community engagement from schools tend to end in failure. The importance of engaging schools from the outside rather from

the inside makes exceedingly clear that the burden for engaging students does not rest exclusively on the shoulders of teachers and schools. The good news is that many community organizations that would become empowered by school partnerships have every incentive to engage in them.

One of the most powerful models demonstrating that the key to innovative ELTO design may emanate from community partners is that of Citizen Schools, a nonprofit organization that delivers after-school and expanded day programming to school partners throughout the country. Citizen Schools existing in a number of urban areas typically partner with some of the lowest performing schools in the district and state, with student poverty rates of over 90 % or more. Take, for example, Clarence Edwards Middle School, a fully integrated ELTO school in Boston. A failing school in 2005, it was one of the lowest performing in the city on the verge of closure. Today, the school is one of Boston's highest performing. It completely eliminated an achievement gap in mathematics, and decreased its achievement gap in literacy and science by 80 % of Massachusetts' gap. The catalyst for the change was the implementation of a new partner-dependent ELTO in 2006, which extended the school day by 3 h and created partnerships with selected organizations to help deliver instruction and programming (Schwartz and McCann 2011).

The model for Citizen Schools is predicated on community involvement, attracting scores of volunteers who donate hundreds of thousands of hours to students every year (Schwartz and McCann 2011). The most successful partnerships in the Citizen Schools' experience has three characteristics: (a) additional academic instruction aligned with curricula from the school day, (b) fresh activities and approaches that foster student motivation, and (c) the ability to mobilize external resources that support student learning (Schwartz and McCann 2011). For some schools, community partners provide a second shift of educators to teach and engage students in expanded hours. This requires strong coordination and alignment between school and community organization staff to ensure that the transition of instruction is seamless throughout the school day.

A signature element of the Citizen Schools Model is a 3 h of project-based apprenticeship learning weekly and at least 5 h of academic practice including structured time for homework and academic lessons. Overall, indicators of success for such models include strong principal leadership, a culture of achievement and belief in student success, willingness to share data on student outcomes, and commitment to school reform within the district (Schwartz and McCann 2011).

Some innovative schools are developing cost-effective models to reallocate resources to fund a 9-h day with the same amount of money that other schools use to fund much shorter schedules. Some of the most promising strategies include a modest increase in student to teacher ratio (which data collected suggests has not led to adverse effects in student achievement); technology-based, individualized instruction to complement traditional teacher-led instruction; and 2 h per week of coverage by second shift educators, allowing for teacher professional development during these hours (instead of paying teachers overtime on evenings or weekends). For example, a highly successful charter school in San Jose, California, Rocketship Education, uses a hybrid approach in which a "Learning Lab" time with computer-driven and

tutor-aided instruction adds 100 min to each school day without additional work for teachers (Schwartz and McCann 2011).

However, the greatest financial as well as educational gains may come as a function of student retention. When students are retained through better offerings, schools and districts can also retain per-pupil allocations from the state and federal government that would have been lost if students left the system. Of course, if ELTO models eventually *increase* enrollment, it also increases revenue for schools. For example, Jane Long Middle School in Bryan, Texas, increased enrollment by 20 % in the first year by partnering with Citizen Schools, reversing a multiyear slide up until that year.

Thus, the most successful ELTO partnerships not only add an extra 3 h onto every school day, but, more importantly, help schools to reimagine and improve the entire expanded school day in order to provide solutions to chronic failure. Through fresh curricula and new instructional approaches, community partnerships can engage, inspire, and support students throughout an expanded school day in ways that foster confidence, resiliency, and well-being. Partnerships can also engage parents and the larger community in fostering better student outcomes, turning them into valued consultants to administrators and teachers of both schools and community partners. Community partners, in turn, are true partners with schools in ways that after-school programs seldom are.

Implications for School Reform and Future Educational Research

Many people believe that school reform of some sort is needed. However, most of the time discussions of school reform revolve around administrative restructuring, eliminating tracking, or depth versus breadth of content. If engagement is the barometer, most of the research discussed in this book suggests that whole school reengineering is needed, because the shift is primarily a cultural one, which is an outgrowth of the entire community. International studies of engagement like that conducted by PISA (Willms 2003) suggest that schools all over the world need to be more problem focused, applied, active, cooperative, and less abstract, verbal, sedentary, and individualistic. The vision for schools of the future as based on ELTO and school–community partnerships would appear to be a nearly universal prescription. As cumulatively if not individually represented by Montessori Education, Glasser Quality Schools, The Nova School, service learning programs like PeaceJam, after-school programs for science learning like Project Exploration, and most of the other models discussed in this book, effective schools of the future will most likely represent a shift to the intentionally blending of academic, physical, social, and emotional goals and activities throughout an extended school day. It will increasingly make no sense to speak of enrichment programs as occurring only before or after school. If they are enriching to youth, they need to be an integral part of the total school experience.

In addition, the school reform debate is too often mired down by differences between a more liberal or more conservative political view. For example, a classically conservative, "back-to-basics" doctrine led to the establishment of national, state, and district standards; high stakes testing; and thorough inspection for accountability. These policies are critiqued (e.g., Kohn 2000), however, in a call for educational responsiveness to the developmental, motivational, and emotional needs of the whole child based on research and theory in developmental psychology (see American Psychological Association 1997). In fact, these conflicting forces have swung like a pendulum throughout the history of American educational reform (Kaestle 1985), the tension between proponents of "back-to-basics" and developmental concerns of the "whole child" creating perhaps the most divisive and defining overarching debate in American education. In this book, I argue for a synthesis of the merits of both sides of the debate. Neither mental discipline nor the intrinsic love for learning can suffice by itself; both are needed. Schools cannot breed only "workers" who are responsible workers for tomorrows labor force but are bored beyond belief with no sense of passion, creativity, or spontaneity; nor can we breed only players who enjoy their experience if that enjoyment amounts to nothing more than aimlessness or fooling (Csikszentmihalyi and Schneider 2000).

The important image of positive adolescent development is rather that of the engaged youth: motivated and building skills in challenging but nevertheless enjoyable activities. The most important guiding principles for supporting that all important balance between work and play as future professionals and parents is that of finding that right balance between supporting and challenging; between high expectations for success and obtaining new skills on the one hand; and freedom, involvement, and guidance on the other. We need to do both. Challenging and demanding with no support and no freedom creates only workers who find no joy in life but must constantly live up to the expectations of others without knowing or doing what it is that he or she loves himself or herself. Providing support and freedom with no structure or expectations breeds only players lacking in control, respect, and clarity of one's role in society and hope for the future. When we provide both challenge and support in our learning environments, we have the best chance of helping children find flow and fulfillment in chosen and voluntary activities most in line with their individual identity and talents.

There is a growing chorus of voices within educational circles that recognize the need to more flexibly expand our vision of addressing students' needs through both schools and community organizations. An expanded learning strategy as modeled by ELTOs have a whole-child focus that help students from disadvantaged backgrounds gain well-rounded educational experiences for them to be successful in school and beyond. ELTOs can be an effective delivery mechanism for diverse learning opportunities in resource-poor communities, potentially providing a wide array of services for youth through their community partners. These models understand that meaningful engagement in learning cannot occur without social and emotional well-being of the student. Promoting student well-being occurs by providing both formal and informal learning opportunities to develop cognitive and noncognitive capacities in a variety of settings supported by strong relationships.

ELTO models and partners are generally committed to sharing data, engaging in evaluations and formative assessments, and looking for a broader set of indicators of student learning and success such as engagement and social competency skills in addition to grades and test scores. Data-driven accountability is now standard practice in schools and youth organizations. However, a great deal of work remains to be done; investing in longitudinal evaluations, controlled experiments and experimental designs, and data sharing across partners would help to build a more robust case for expanded learning models. Another use for information gathering and sharing would be to leverage technology and the Internet to keep track of youth organizations and activities within communities as they arise so that youth can be better aware of opportunities for engagement and community building. So far, emerging data suggests that ELTs and ELTOs can be successful in boosting student learning and retention by implementing a number of innovative strategies that engage youth (Malone 2011).

Towards Engagement, Flow, and Well-Being in Education

Most available research tends to converge on the observation that *meaningful engagement* is composed of two independent processes—academic intensity and a positive emotional response. Optimal learning environments provide academic intensity through environmental challenge characterized by clear goals and high expectations for performance with complex tasks found to be relevant to students' lives and the community at large. They also support students to succeed through motivational support, positive relationships, feedback, and opportunities for action and collaboration. Innovative, nontraditional schools presented in this book are living examples that students' sense of belongingness, autonomy, and responsibility to actively participate in and shape their environment are among the essential motivators for youth to grow and learn. Flow and engagement can be contagious, having the potential to cross over from teacher to student, student to teacher, and permeate an entire group participating in a shared activity. New immersive technologies such as educational video games also show promising signs of enhancing student engagement to learn in the future. Indeed, there are many routes to engaging youth; creating *meaningful engagement* requires attention to a variety of contextual, instructional, developmental, and interpersonal factors beyond the preoccupation with narrowly defined educational "outcomes."

Research has shown that the positive development of youth occurs through a constellation of resources that provide physical safety and security, developmentally appropriate structure and expectations for behavior, emotional and moral support, and opportunities to make a contribution to one's community (Eccles and Gootman 2002). These resources and provisions need to be considered highly in planning school and community transformation that supports the education and development of youth. In grappling with how the in-school and out-of-school time worlds may be better integrated, schools may find that a blended approach becomes

an ideal: one in which traditional academic goals intentionally interact with youth engagement activities (Noam 2004). This could profitably take the form of extended-time school programs in which a variety of academic, extracurricular, technological, physical, and enrichment activities are intentionally blended in both formal and informal environments.

Expanded learning time and opportunities, with or without community partnerships, will ultimately be successful to the extent that they promote engagement in learning and flow experiences. Flow, or becoming totally absorbed in an activity to the point of losing self-consciousness and a sense of time, is a central experience of "The Engaged Life," one of three paths to human happiness (Seligman, Ernst, Gilham, Reivich and Linkins 2009). A key recognition of the positive psychology movement is that engagement is clearly synergistic with well-being for all ages. If education is to be concerned with the happiness and well-being of the younger generation, then engagement and purposeful activity would need to be at the center of efforts to build "positive education" (Seligman et al. 2009). That is, in addition to addressing students' needs, education can also have a significant role to play in the recognizing and building of students' strengths and sense of purpose. Once basic needs have been met, engaging contexts proceed to awaken yearnings and callings, stimulate excitement, facilitate personal discoveries, and fortify self-esteem. By serving the aims of both long-term learning and psychological well-being, the propensity towards meaningful engagement in enjoyable and rewarding activities may be one of the most important outcomes of good education.

References

American Psychological Association. (1997). *Learner-centered psychological principles: A framework for school redesign and reform.* http://www.cdl.org/resource-library/articles/learner_centered.php. Accessed 13 Oct 2010.

Bempechat, J., & Shernoff, D. J. (2012). Parental influences on achievement motivation and student engagement. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *The handbook of research on student engagement* (pp. 315–342). New York: Springer.

Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education, 84*(6), 740–756.

Carnegie Council on Adolescent Development. (1989). *Turning points: Preparing American youth for the 21st century*. New York: Carnegie Corporation.

Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *Self processes and development. The minnesota symposium on child psychology* (Vol. 23, pp. 43–77). Hillsdale: Erlbaum.

Csikszentmihalyi, M., & Schneider, B. (2000). *Becoming adult: How teenagers prepare for the world of work*. New York: Basic Books.

Damon, W. (2008). *The path to purpose: How young people find their calling in life*. New York: Free Press.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior* (Perspectives in social psychology). New York: Plenum.

Dewey, J. (1896/1973). Interest in relation to training of the will. In J. J. McDermott (Ed.), *The philosophy of John Dewey: Two volumes in one*. Chicago: University of Chicago Press.
Dewey, J. (1916/1944). *Democracy and education: An introduction to the philosophy of education* (1st Free Press paperback ed.). New York: Collier-Macmillan.
Dewey, J. (1975). *Interest and effort in education*. Carbondale: Southern Illinois University Press.
Eccles, J. S., & Gootman, J. A. (2002). *Community programs to promote youth development*. Washington, DC: National Academy Press.
Einstein, A. (1954). In Modern Library (Ed.), *Ideas and opinions*. New York: Modern Library.
Epstein, J. L. (1995). School/family/community partnerships: Caring for the children we share. *Phi Delta Kappan, 76*(9), 701–712.
Farbman, D. A. (2009). *Tracking an emerging movement: A report on expanded time schools in America*. Boston: National Center for Time & Learning.
Fischer, N., Kuhn, H. P., Zuechner, I., & Theis, D. (2011, August). *Quality and dosage of extracurricular activities: Effects on motivational and social development.* Paper presented at the biennial meeting of the European Association for Research on Learning and Instruction (EARLI), Exeter.
Frazier, J. A., & Morrison, F. J. (1998). The influence of extended-year schooling on growth of achievement and perceived competence in early elementary school. *Child Development, 69*, 495–517. doi:10.1111/j.1467-8624.1998.tb06204.x.
Glasser, W. (1998). *Choice theory: A new psychology of personal freedom*. New York: HarperCollins.
Kaestle, C. (1985). Education reform and the swinging pendulum. *Phi Delta Kappan, 66*(6), 422–423.
Kohn, A. (2000). *The case against standardized testing: Raising the scores, ruining the schools*. Portsmouth: Heinemann.
Lerner, R. M. (2004). *Liberty: Thriving and civic engagement among America's youth*. Thousand Oaks: Sage.
Lerner, R. M., Lerner, J. V., Almerigi, J. B., Theokas, C., Phelps, E., Gestsdottir, S., et al. (2005). Positive youth development, participation in community youth development programs, and community contributions of fifth-grade adolescents: Findings from the first wave of the 4-Hstudy of positive youth development. *Journal of Early Adolescence, 25*(1), 17–71.
Malone, H. J. (Ed.). (2011). *Expanded learning time and opportunities* (New directions for youth development: Theory, practice and research, Vol. 131). San Francisco: Jossey-Bass.
Malone, H. J., & Noam, G. G. (2011). Next steps in the expanded learning discourse. In H. J. Malone (Ed.), *Expanded learning time and opportunities* (New directions for youth development: Theory, practice and research, Vol. 131, pp. 119–136). San Francisco: Jossey-Bass.
Martin, J. R. (2011). *Education reconfigured: Culture, encounter, and change*. New York: Routledge.
MASS 2020. (2008). *Redisigning today's schools to build a stronger tomorrow: The Massachusetts expanded learning time initiative 2007–2008 annual report.* Boston: Mass 2020
Montessori, M. (1967). *The absorbent mind* (1st ed.). New York: Holt Rinehart and Winston.
Noam, G. G. (Ed.). (2004). *After school worlds: Creating a new social space for development and learning* (New directions for youth development, Vol. 101). San Francisco: Jossey-Bass.
Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist, 44*(3), 159–175.
Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist, 55*(1), 68–78.
Schmidt, J. A., Shernoff, D. J., & Csikszentmihalyi, M. (2007). Individual and situational factors related to the experience of flow in adolescence: A multilevel approach. In A. D. Ong & M. v. Dulmen (Eds.), The handbook of methods in positive psychology (pp. 542–558). Oxford: Oxford University Press.
Schutz, A. (2006). Home is a prison in the global city: The tragic failure of school-based community engagement strategies. *Review of Educational Research, 76*(4), 691–743.

Schwartz, E., & McCann, E. (2011). Citizen schools' partner-dependent expanded learning model. In H. J. Malone (Ed.), *Expanded learning time and opportunities* (New directions for youth development: Theory, practice and research, Vol. 131, pp. 93–106). San Francisco: Jossey-Bass.

Schweinle, A., & Helming, L. M. (2011). Social psychology of education. *Social Psychology of Education, 14*(4), 529–546.

Seligman, M. E. P., Ernst, R. M., Gillham, J., Reivich, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford review of education, 35(3)*, 293–311. doi: 10.1080/03054980902934563.

Shernoff, D. J., Csikszentmihalyi, M., Schneider, B., & Shernoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18*(2), 158–176.

Shernoff, D. J., & Vandell, D. L. (2007). Engagement in after-school program activities: Quality of experience from the perspective of participants. *Journal of Youth and Adolescence, 36*, 891–903.

Sims, P. (2011, April 5). The Montessori Mafia. *The Wall Street Journal*. http://blogs.wsj.com/ideas-market/2011/04/05/the-montessori-mafia/. Accessed 12 Apr 2013.

Sizer, T. R. (1984). *Horace's compromise: The dilemma of the American high school*. Boston: Houghton Mifflin.

Smith, C., & Avika, T. (2008). Quality accountability: Improving fidelity of broad developmentally focused interventions. In M. Shinn & H. Yoshikawa (Eds.), *Toward positive youth development: Transforming schools and community programs* (pp. 192–212). Oxford, UK: Oxford University Press.

Steinberg, L. (1996). *Beyond the classroom: Why school reform has failed and what parents need to do*. New York: Simon & Schuster.

Traphagen, K., & Johnson-Staub, C. (2010). *Expanded time, enriching experiences: Expanded learning time schools and community organization partnerships*. Washington, DC: Center for American Progress.

Walker, J., Marczak, M., Blyth, D., & Borden, L. (2005). Designing youth development programs: Toward a theory of developmental intentionality. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after-school and community programs* (pp. 399–418). Mahwah: Lawrence Erlbaum.

Willms, J. D. (2003). *Student engagement at school: A sense of belonging and participation: Results from PISA 2000.* In J. D. Wilms (Ed.), Paris: Organisation for Economic Co-operation and Development.

Yonezawa, S., Jones, M., & Joselowsky, F. (2009). *Youth engagement in high schools: Developing a multidimensional, critical approach to improving engagement for all students*. New York: Academy for Educational Development and UCSD-CREATE.

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